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TPS Reports

Access to Historic Buildings for the Disabled:

Suggestions for Planning and Implementation

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As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to insure the wise use of all these resources. The Department also has major responsiblity for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

The Heritage Conservation and Recreation Service, a non-land managing agency within the Department, is responsible for assuring the identification, protection, and beneficial use of our important cultural, natural, and recreational resources, and guidance to those in the public and private sectors involved in conservation or recreation projects.

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Robert L. Herbst, Assistant Secretary

Heritage Conservation and Recreation Service
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Charles Parrott

U.S. Department of the Interior
Heritage Conservation and Recreation Service
Technical Preservation Services Division
Washington, DC 20243

1980

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Foreword

Technical Preservation Services is pleased to present Access to Historic Buildings for the Disabled: Suggestions for Planning and Implementation in its TPS Reports series. This publication is intended to assist in providing barrier-free access to historic buildings through methods that are in conformance with the Secretary of the Interior's Standards for Historic Preservation Projects. It examines those methods being used to provide access and suggests alternative approaches in lieu of architectural changes. Also discussed are laws such as the Architectural Barriers Act of 1968, section 504 of the Rehabilitation Act of 1973, and various state and local buildings codes. Since the various laws regarding accessibility are subject to change--especially section 504--and methods for making buildings accessible are constantly being improved, it is our intention to update and revise this publication to reflect such changes and improvements.

This report was written by Charles Parrott, Historical Architect, formerly a staff member of Technical Preservation Services. Other staff members who contributed materially to the development of this report are Kay D. Weeks, Technical Writer-Editor; and Historic Architects James A. Caufield, Robert P. Meden, AIA, ASID, and Baird M. Smith, AIA. The final manuscript was copy edited by Robert Haynes, Office of Public Affairs.

Lee H. Nelson, AIA
Chief, Technical Preservation
Services Division

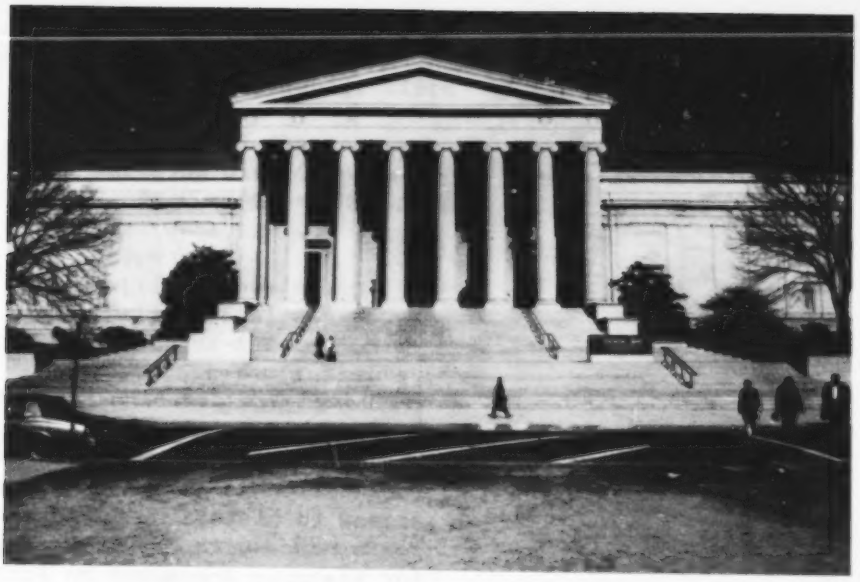

Figure 1: Traditional Building Practices. Historically, as is typical in this view of the National Gallery of Art, Washington, D.C., structures usually separated the main level from the ground level with a raised floor which required a flight of steps to reach it. This is not only provided ventilation for the lower levels but also gave prominence to the building. Unfortunately, this also proved to be a deterrent for handicapped individuals over the years. Photo: Charles Parrott.

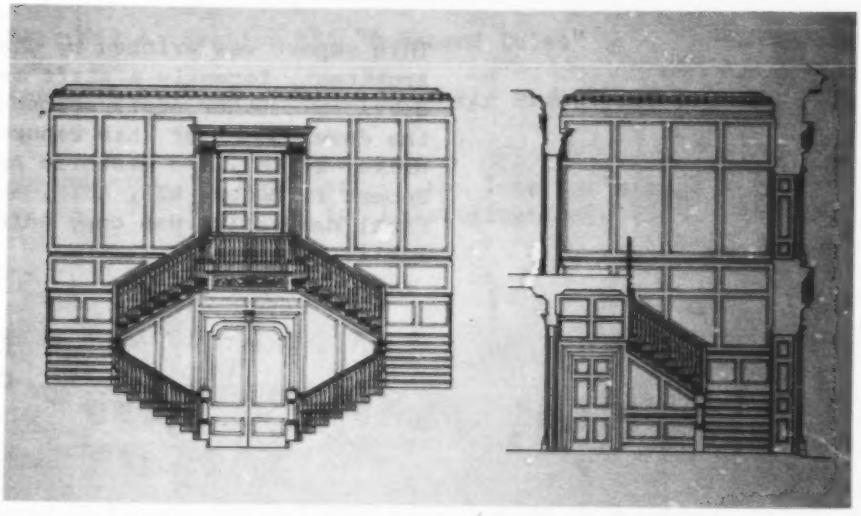

Figure 2: Interior Staircases. "Drayton Hall," near Charleston, South Carolina, owned and operated by the National Trust for Historic Preservation, is a good example of how a grand staircase separated the various levels of the house. Prior to the early 20th century, almost all structures in this country, particularly residential, were multi-leveled. Therefore even if a disabled person could negotiate the entrance to the building, the ability to proceed throughout was limited. Illustration: Courtesy of the National Architectural and Engineering Record (NAER), Belmont Freeman.

Introduction

Problem Definition

Historically, most buildings were designed to be readily accessible only to the able bodied (see figures 1 and 2). Barriers to access seemingly evolved from functional or ceremonial needs into traditional building practices, such as the long flight of steps often separating the principal floor from grade level. Architectural barriers have served to perpetuate a general exclusionary attitude toward disabled people, keeping them from participating fully in the actitivities that take place within many buildings. Since the 1960s, however, this nation has become increasingly conscious of the need to make our buildings and the activities within them more accessible to our disabled citizens.

During this same period, we have identified many of our older buildings as having historical, architectural, and cultural significance and, thus, worthy of preservation. It is unfortunate that historic buildings generally tend to be inaccessible to the disabled. It is also unfortunate, however, that when full accessibility is assured, those very qualities that made the buildings worthy of preservation may be seriously compromised. Although managers of historic buildings are attempting to respond sensitively to various accessibility requirements, many are frustrated because of the current lack of planning information to assist in carrying out those requirements while retaining the historic and architectural integrity of the buildings.

Chapter 1: Legal Framework

Legal Requirements

The principle of equal opportunity for each citizen under the law as embodied in the Constitution provides the basis for anti-discrimination legislation. Since much of the discrimination experienced by the disabled has resulted from the inaccessibility of buildings, laws and regulations have been written at every level of government--federal, state, and local--to protect our disabled citizens' right to barrier-free access.

Where historic buildings are concerned, compliance with governmental accessibility requirements must often be reconciled with those laws and regulations written to help preserve our nation's significant architectural resources. Thus, a general understanding of each of the major laws is essential in planning accessibility solutions, which minimize the potential for damaging the historically significant features of the building.

It is important to realize that legal requirements governing a building's accessibility may originate at any of the three governmental levels. Further, any legal subdivision of those governmental levels may have direct jurisdictional control over buildings if the subdivision is responsible for the:

- Design and construction related work on their own buildings or the building projects that they financially aid;
- Operation or financial support of human activities and programs housed in their own or in other buildings;
- General health, safety, or welfare of building occupants in buildings within the jurisdiction of the governmental unit.

Although historic preservation laws and regulations have been less widely promulgated than accessibility laws and regulations, those legal requirements for historic preservation that similarly originate at the federal, state, or local levels of government must also be met. Such requirements attempt to preserve the historically and architecturally significant characteristics of properties,

which have been or in some cases are considered to be worthy of preservation. Preservation of these buildings can involve two major categories of federal undertakings:

- Design and construction related work on federally owned or financially aided buildings; and

- Protection of the public interest in the historic built environment regardless of the financial involvement or the federal government.

The following pages will summarize those design standards, laws, regulations, and building code provisions that apply both to accessibility and to historic preservation. It should be noted that compliance may be required by one or more governmental levels involved in making a historic building accessible to the disabled.

Accessibility Design Standards: ANSI A117.1 (1961)

One of the first important achievements of the accessibility movement was the development and publication in 1961 of design standards by the American National Standards Institute (ANSI) entitled "Specifications for Making Buildings and Facilities Accessible to, and Usable by the Physically Handicapped" (ANSI A117.1). The design standards give the dimensions and other physical requirements considered to be necessary in making publicly used buildings--and most of the features therein--accessible to disabled persons; however, they specifically exempt the "private residence" from the need to conform to the standards.[1]

These standards are only design guidelines until they are made law by incorporation into local, state, or federal regulations. Thus, the 1961 ANSI standards are included in most of the subsequent accessibility laws and regulations and included, by amendment, in many building codes nationwide. The 1961 standards were reaffirmed in 1971 without change.

ANSI A117.1 Standards Applied to Historic Buildings (1979)

The 1979 edition makes no distinction between public and private buildings, leaving the scope of coverage up to the governmental authority adopting the standards.[2] Like the earlier version of A117.1, all building construction activity, whether new construction, remodelling, alteration, rehabilitation, or restoration falls within the scope of the design standards at the option of the adopting governmental authority.[3]

It should be noted that even though in 1979 standards make no specific exception for historic buildings, they do include suggestions that adopting authorities can use to tailor the standards to fit their own local needs in terms of scope and coverage. Adopting authorities are advised

that they may wish to frame their own requirements with regard to which types of building/occupancy should be covered in applying the standards and to what extent. The standards further suggest differentiating between new construction and work on existing buildings. Thus, it is possible for adopting authorities to qualify the scope of ANSI A117.1 by allowing alternative but equivalent compliance or by allowing compliance waivers.

Architectural Barriers Act (1968)

This congressional act directed the General Services Administration (GSA) to assure that architectural barriers were eliminated where construction work was being undertaken on federally owned or leased buildings or where federal loan or grant funds were being expended for construction work on any building.[4] Such construction work could involve major repairs or the remodeling of historic buildings.[5]

Regulations implementing the act (for example, those promulgated by GSA) indicate that ANSI A117.1 accessibility standards must be met in all applicable new construction. With regard to existing buildings, the regulations indicate that contruction undertakings directly affecting active use or movement through the building must be made barrier-free. For example, replacing a roof or repairing and painting the exterior siding would not require compliance, but work on stairways, doors, or toilets would require compliance to the extent that those building elements restricted access or were inaccessible (see figures 3 and 4). A method for waiving or modifying the design standard on a case-by-case basis is provided in the regulations as well as a procedure given for lodging complaints about inaccessible buildings.

The Department of Housing and Urban Development, Department of Defense, United States Postal Service, and General Services Administration were authorized to issue regulations implementing the Architectural Barriers Act.[6] All other federal agencies operating construction or construction aid programs are obligated to comply with the GSA regulations and to apply to GSA to obtain modification or waiver of compliance.

Section 504 of the Rehabilitation Act of 1973

Section 504 was enacted in order to accelerate the process of making all buildings receiving federal aid accessible to the disabled.[7] It states:

> No otherwise qualified handicapped individual . . . shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

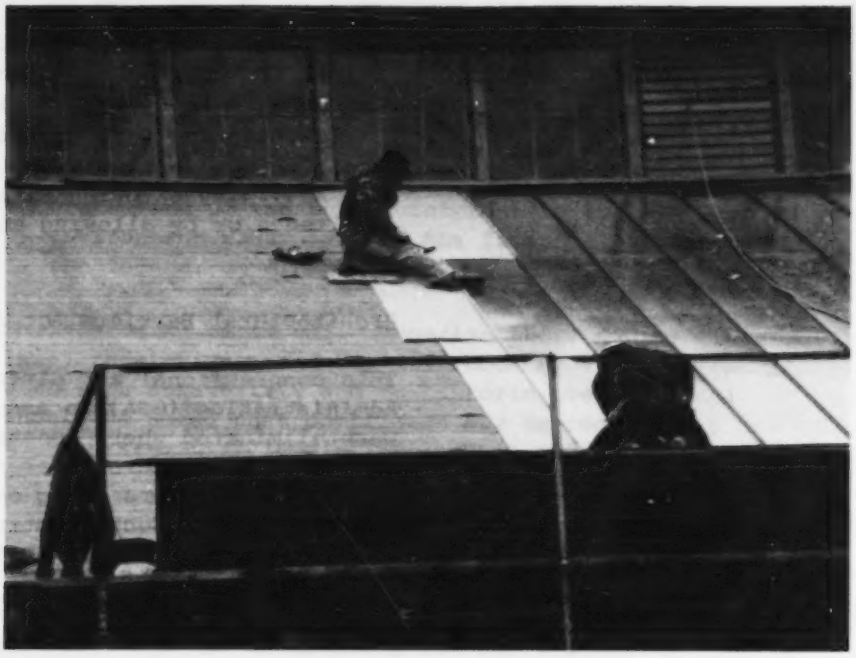

Figure 3: Non-Compliance Rehabilitation Work. Since the construction work being preformed on the roof of the "O" Street Market, Washington, D.C., is obviously an area which is inaccessible to any users of the building, it is not required by law to become accessible to disabled individuals. Photo: Charles Parrott.

Figure 4: Compliance Rehabilitation Work. Providing accessibility for the disabled is mandatory whenever any construction or rehabilitation work is being performed on any circulatory functions (such as the exterior stairs pictured here) with federal financial assistance. Photo: Charles Parrott.

Regulation and enforcement of section 504 is the responsibility of each federal grant giving agency or department. Each agency or department prepares rules which apply to its own grant programs (see appendix A for The U.S. Department of the Interior's "Proposed Rule"). Thus, section 504 will affect all historic buildings associated with any activity that has received federal aid of any kind. Since section 504 requires equal protection of law through "program or activity" accessibility, compliance with section 504 does not specifically require that an existing building be made free of all architectural barriers. To achieve program accessibility, section 504 regulations allow other forms of compliance, in addition to the removal of architectural barriers, that involve reassignment or restructuring of the housed activity in such a way as to make its overall benefits accessible.

Section 119 of the Rehabilitation, Comprehensive Services, and Developmental Disabilities Amendment of 1978 expanded the coverage of section 504 program accessiblility beyond federally aided projects to include "any program or activity conducted by any executive agency or by the United States Postal Service."[8] Thus, program accessibility was broadened to include activities in federally owned or leased facilities in addition to federally aided projects. After federal agencies incorporate this amendment into their regulations, all federally operated programs will be required to be accessible to disabled persons.

State and Local Accessibility Laws

Since the early 1960s, each of the 50 states and the District of Columbia has enacted some sort of specific accessibility law in addition to, or as part of, a building code.[9] State accessibility laws and those enacted by larger cities and urban counties are not necessarily limited to projects involving state or local government funds. Since state laws and local ordinances are based upon that authority reserved to states by the Tenth Amendment, these laws may cover any construction activity regardless of public financial assistance. In all cases, such state laws apply to any building on which a construction related activity is aided with state funds. In addition, a number of states require that buildings under state and local ownership be made accessible when alterations or renovations are carried out. In other cases, the laws apply to any privately owned building that is broadly defined by the state or local jurisdiction as "publicly accessible" in terms of everyday living and working accommodations. Public accessibility, then, can include places of assembly, multiple unit residences, commercial and industrial buildings, health facilities, and overnight accommodations. In the case of existing buildings, many laws require that architectural accessibility be provided when specific types of alterations or renovations are performed--contingent upon the cost or location and purpose of the work. At least two states have accessibility requirements based on the retrofitting of existing

buildings,[10] even though alterations or renovations are not intended.

Building Codes: Basic Accessibility Requirements

Compliance with state and local accessibility laws on exsiting buildings is generally based on construction activity (known as the 25-50 percent rule) usually enforced through the building regulatory establishment of the states or their local governmental units. Thus, enforcement is typically carried out through incorporation of specific accessibility requirements into the state or local building codes and monitored by local building code officials. In some cases, such state or local laws are enforced and/or reviewed by an accessibility review board or a state administrative agency.

Where a state or local accessibility law is enforced through a building code, the actual architectural accessibility requirements in a particular building code may be a part of either of these sources:

- State Building Code: In those states that have building codes, accessiblity provisions may either be required statewide or, alternatively, adopted by local jurisdictions for certain categories of contruction work. State building codes and their accessibility provisions may be uniquely crafted documents or incorporate, by reference, one of the three model national codes.[11]

- Local Building Code: Many states allow lower governmental jurisdictions to provide their own building code. Larger cities often follow this guidance while smaller jurisdictions adopt one of the three model national codes, adapted with their own accessibility provisions.

These various codes incorporate aspects of ANSI A117.1 into their accessiblity provisions, or alternatively, ANSI A117.1 is completely incorporated by reference. Because the various accessibility standards are often modified when incorporated into a building code, no two building code jurisdictions have exactly the same code provisions as they apply to accessibility or ownership, although all are similar in intent.

Building Codes: Alternative Compliance, Waivers, and Appeals

Many building codes contain provisions that allow alternative methods of strictly meeting requirements if the basic intent of the code is followed. These include: historic building compliance modification provisions;[12] alternative materials and methods of construction provisions;[13] and building rehabilitation provisions.[14] In addition, the rehabilitation accessibility advice in the appendix of the ANSI A117.1 (1979) standards may prompt many adopting authorities to provide acceptable alternatives to

those provisions specified in their code for new construction. However, even if a code does not contain a specific waiver or modification clause or offer a method of achieving alternative compliance, most codes allow the code official to waive any provision if a satisfactory alternative is forwarded. Finally, most codes contain formal appeal provisions so that alternative forms of compliance may be considered by a duly constituted review board.

Administrative Accessibility Directives

Many governmental organizations at the federal, state, and local levels volunteer to improve the accessibility of their facilities. Such administrative decisions are made in a spirit of cooperation and are not based on a specific legal requirement. Unfortunately, because construction work to provide accessibility is done informally and sometimes hurriedly, there is often a lack of proper consideration for the historic integrity of the building.

Historic Preservation Legal Protections

In the case of existing properties certified as historic, compliance with accessibility laws is tempered by the existence of other laws, which establish as a national goal the preservation of our significant historic architectural resources for public benefit. Thus, the intent of both the accessibility laws and the preservation laws must be simultaneously observed.

Federal Ownership or Involvement

When federally owned historic properties are repaired or rehabilitated, or where federal loans or grants are used for such construction work, there must be compliance with certain historic preservation laws. The chief federal laws that offer historic resource protection are the National Historic Preservation Act of 1966, [15] and Executive Order 11593, "Protection and Enhancement of the Cultural Environment" (1971).[16] They establish as federal policy the preservation of architecturally, historically, and culturally significant federally owned properties and non-federally owned properties affected by the licensing or financial assistance programs of the federal government. The federal agencies are required by section 106 of the Historic Preservation Act to take into account the effect their undertakings will have on National Register properties. Federal agency observance of this national preservation policy is monitored by the Advisory Council on Historic Preservation which is empowered to review such federal undertakings involving historic properties.[17] Because of the anticipated alterations to historic buildings caused by the implementation of section 504, the Advisory Council has published a policy statement concerning the method they will follow in evaluating such projects under their purview. This policy statement recommends that each federal agency adopt methods to make historic buildings accessible to disabled people which do not substantially

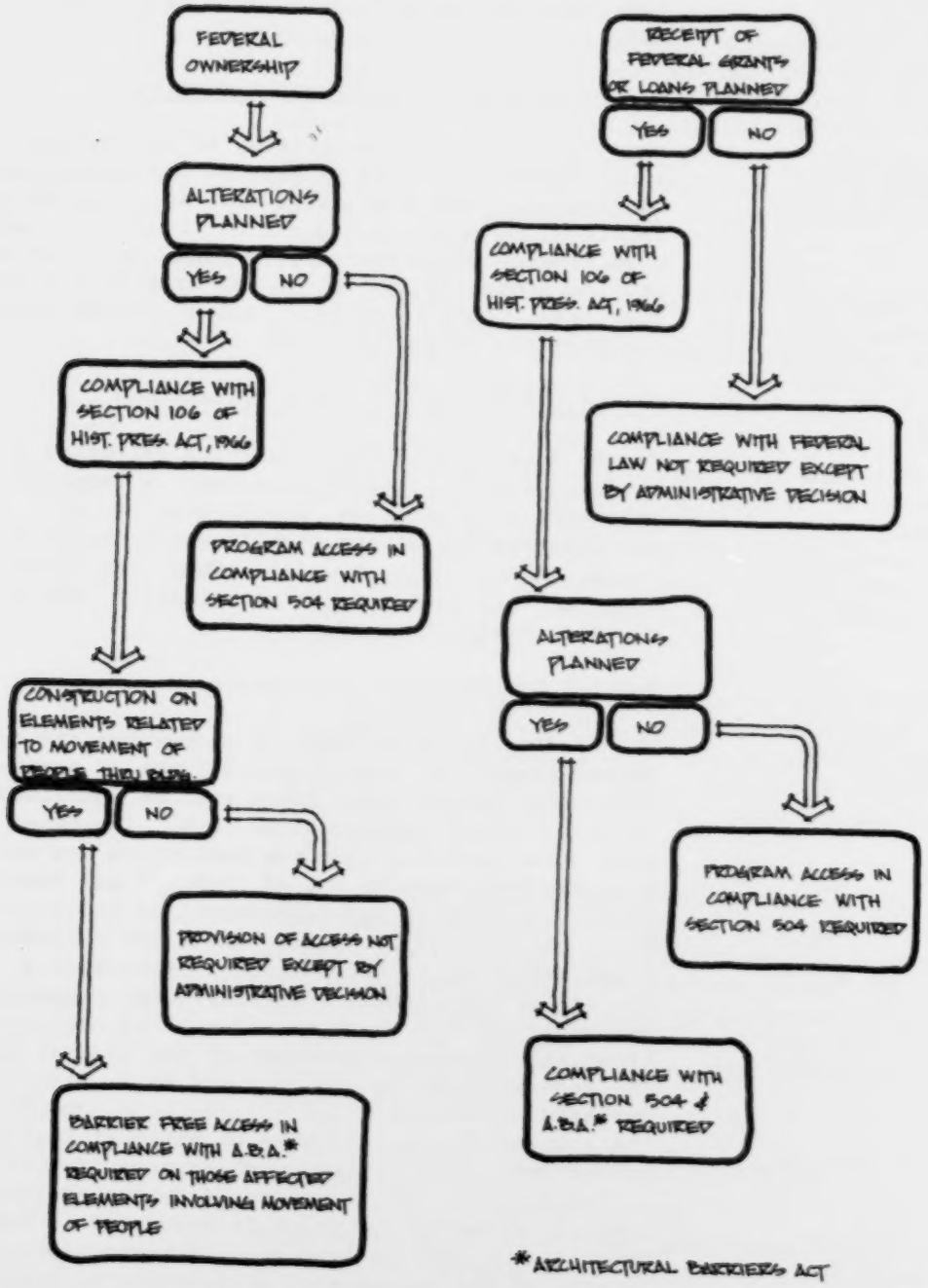
FEDERAL OWNERSHIP
ALTERATIONS PLANNED
YES
NO
COMPLIANCE WITH SECTION 106 OF HIST. PRES. ACT, 1966
PROGRAM ACCESS IN COMPLIANCE WITH SECTION 504 REQUIRED
CONSTRUCTION ON ELEMENTS RELATED TO MOVEMENT OF PEOPLE THRU BLDG.
YES
NO
PROVISION OF ACCESS NOT REQUIRED EXCEPT BY ADMINISTRATIVE DECISION
BARRIER FREE ACCESS IN COMPLIANCE WITH A.B.A.* REQUIRED ON THOSE AFFECTED ELEMENTS INVOLVING MOVEMENT OF PEOPLE
RECEIPT OF FEDERAL GRANTS OR LOANS PLANNED
YES
NO
COMPLIANCE WITH SECTION 106 OF HIST. PRES. ACT, 1966
COMPLIANCE WITH FEDERAL LAW NOT REQUIRED EXCEPT BY ADMINISTRATIVE DECISION
ALTERATIONS PLANNED
YES
NO
PROGRAM ACCESS IN COMPLIANCE WITH SECTION 504 REQUIRED
COMPLIANCE WITH SECTION 504 & A.B.A.* REQUIRED
*ARCHITECTURAL BARRIERS ACT

Figure 5: Determination of Accessibility Requirements; Federal Projects. This diagram shows the necessary requirements to achieve legal accessibility for Federal projects. The process has a number of variations dependent upon the ownership of sources of funding and the options available. Illustration: Robert P. Meden.

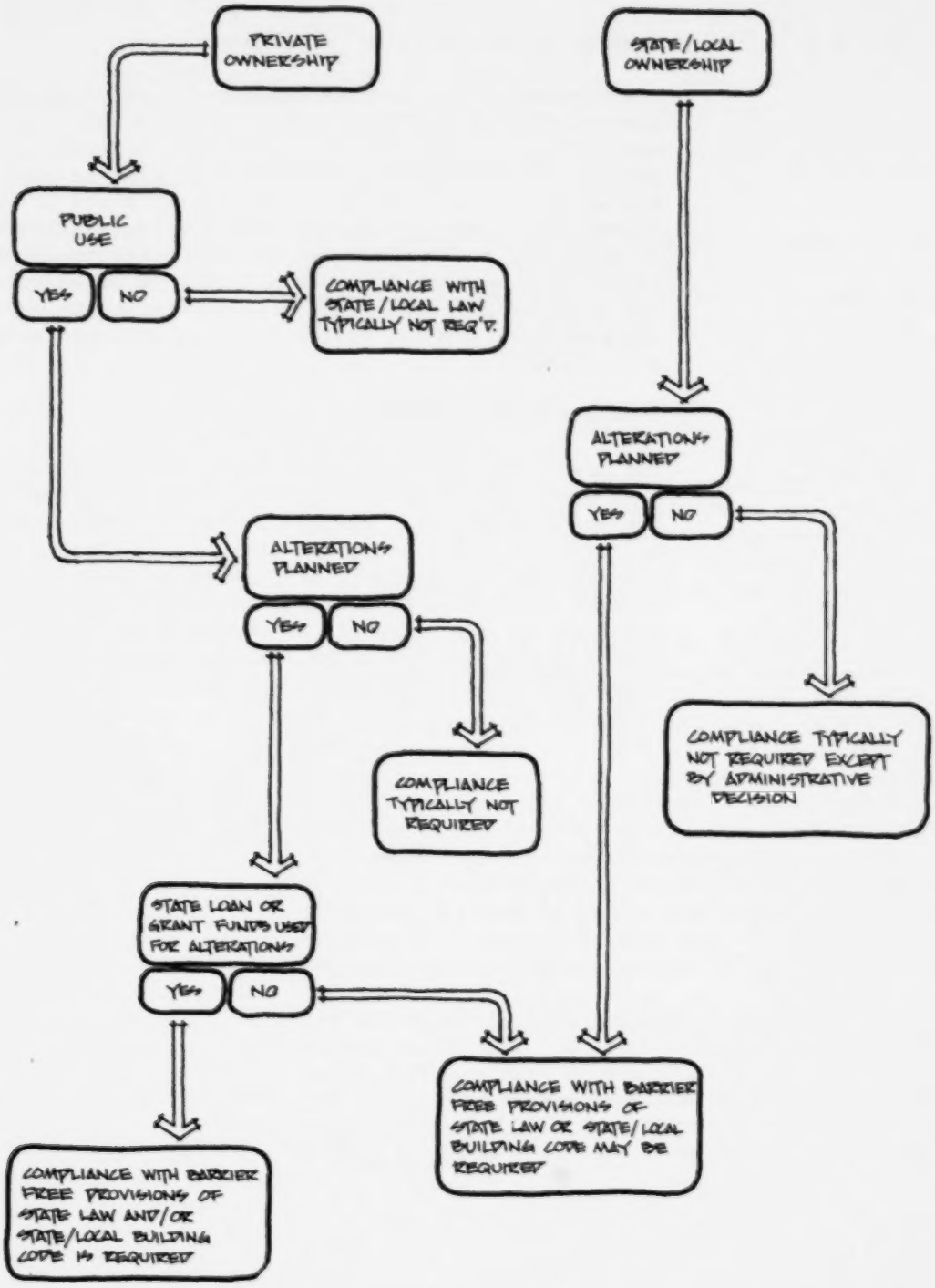

Figure 6: Determination of Accessibility Requirements; State or Private Projects. When dealing with privately or State/locally owned structures, the process is subject to a series of variations, depending on the particular situation. Illustration: Robert P. Meden.

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impact the significant historic features of these properties.[18] Historic properties covered will be limited to federally owned buildings and buildings on which federal funds are to be used for alterations.

Nonfederal Ownership or Involvement

Enforcement of the various state and local accessibility laws--including building codes--by state and local authorities is not affected by federal historic preservation policy. Preservation protection may exist in some form, but the extent varies from place to place. State or local preservation law or historic district legislation may help to provide a balance between accessibility modifications and historic preservation concerns. This is often done under the guidance or review authority of a historic preservation commission or project review board established as part of such a law.

Determination of Accessibility Requirements

The preceding descriptions show that the legal requirements vary according to such complex factors as ownership and funding involvement. Figures 5 and 6 graphically present and simplify the process for determining legal accessibility requirements for historic properties in federal, state or private ownership; and having federal or state funding involvement. By beginning at the top, and answering the yes/no questions, the accessibility design standards, laws, regulations, and building code provisions can be ascertained.

Chapter 2: Compliance Planning; The Process

It is imperative to establish at the outset that accessibility requirements for disabled persons can either be met by means of program activity changes within the historic building and/or by actual architectural changes to the historic building.

The general planning process for the successful achievement of such access is, however, always comprised of a sequence of two basic tasks: 1) collection and evaluation of background information and 2) selection of appropriate methods for providing access. This chapter outlines the overall procedures for carrying out those tasks (see figure 7) and describes the specific methods for providing access that should be considered within the total plan.

Because each existing building has unique architectural and historical components, as well as varying uses, compliance requirements, and disabled user needs, each planning sequence must obviously be approached case-by-case. Whenever possible, the careful evaluation of these variables should benefit from the expertise and assistance of both professional and lay interests. Owners and managers of historic buildings are thus encouraged to seek the involvement of architects or other consultants with proven ability in both historic preservation and accessibility planning, throughout the entire project. In addition, section 504 regulations call for the planning involvement of representative interest groups of disabled people.

For any historic building, the systematic development of an accessibility plan is critical. A poorly conceived plan often does not meet accessibility requirements and may, in fact, cause long-term problems with remaining historic materials as well as introduce new functional problems and unsafe conditions for building users (see figure 8).

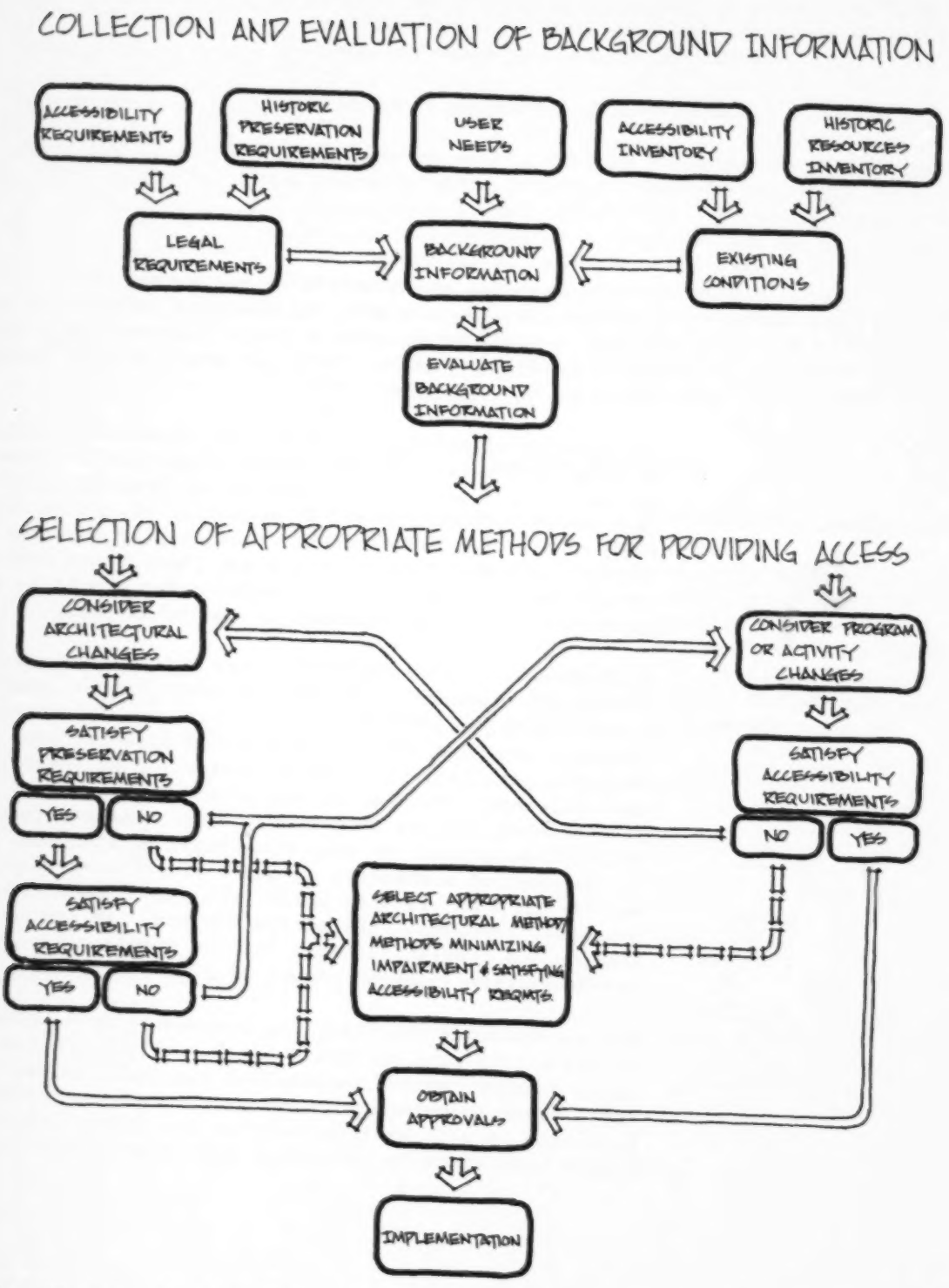

Figure 7: The planning Process. Accessibility to an within historic buildings can be achieved by means of program activity change or by actual architectural changes. Again the method varies with the particular project. The diagram attempts to simplify the overall procedures. Illustration: Robert P. Meden.

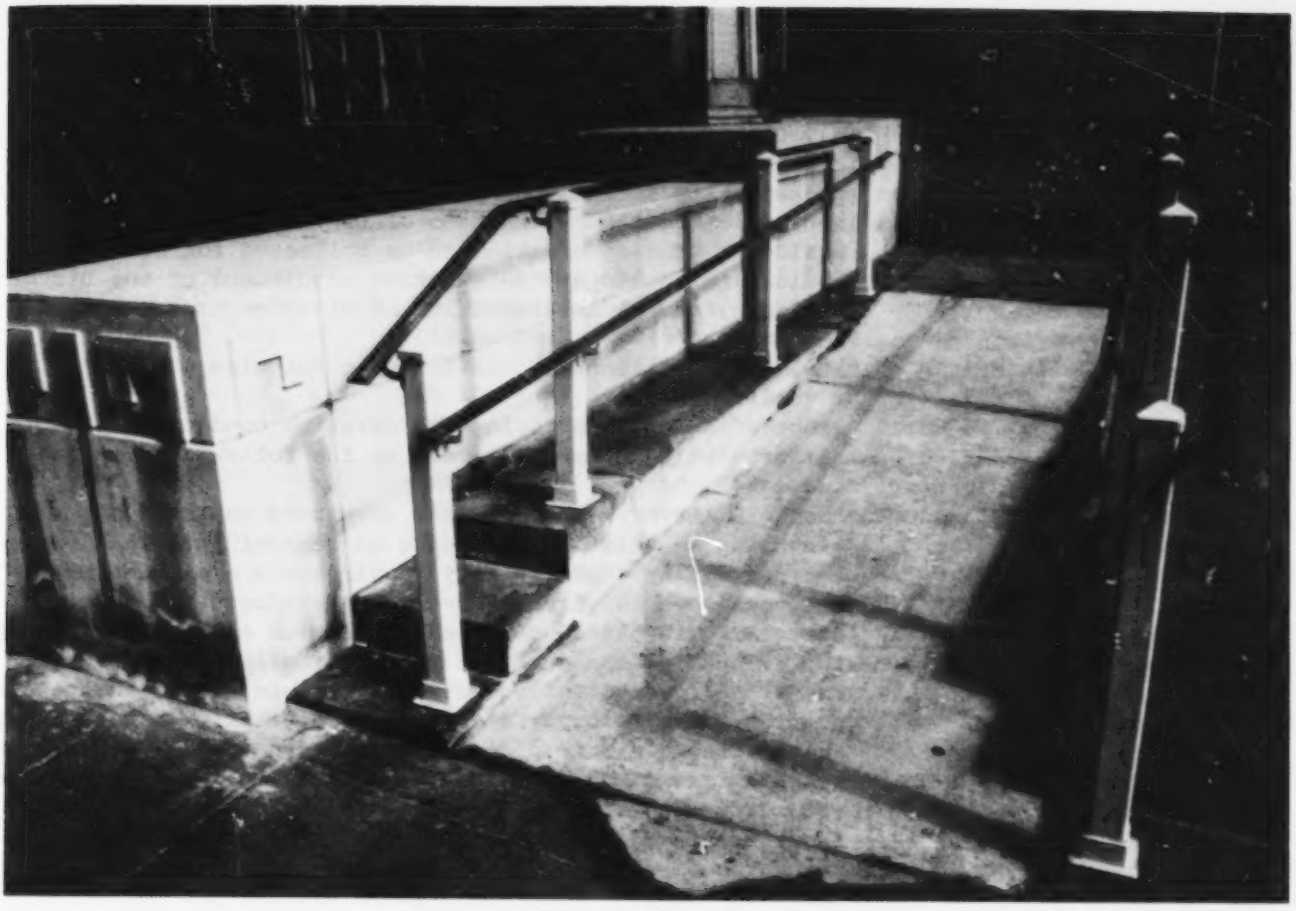

Figure 8: Irreversible Work. In this particular situation, the design of the ramp was not necessarily done with optimum results. The narrow steps and walkway next to the ramp are inappropriate for normal use as is the nadrail on that side. Unfortunately the ramp was cut into the original stone steps and the historic material has been removed. Photo: Charles Parrott.

Collection and Evaluation of Background Information

After the legal requirements have been determined for a particular historic building (see chapter 1, figures 5 and 6), the next phase of planning involves the collection and evaluation of current accessibility and historic preservation information prior to the selection of an appropriate method or methods of providing access to the building. The information to be collected for subsequent evaluation includes: 1) existing conditions of the historic building; and 2) determination of disabled user needs.

Existing Conditions of the Historic Building

Procedures for determining the existing conditions of a historic building are outlined in the following sections.

Accessibility Inventory: This inventory consists of surveying the historic building to determine to what extent the prevailing accessibility requirements are being met. Numerous inventory forms have been developed.[19] Some, especially in the educational facilities area, are intended for evaluating the needs of specific building types or uses. An inventory form currently in use may be adapted to provide basic information on the accessibility conditions in an existing historic property or, alternatively, a new form or checklist can be prepared, combining accessibility recording with a survey of historic features. The requirements of ANSI A117.1, the federal accessibility standards of GSA, the accessibility standards of the local building code, or other references setting out physical requirements are all suitable materials from which to develop an inventory form.

The accessibility inventory should provide information on dimensional and operational features throughout the building and its site, which might potentially receive design attention. For example, information that should be recorded includes the clear opening of doorways when open at a 90 degree angle, door opening pressure, the slope and length of existing ramps and walkway gradients, configuration of level areas at doorways, the dimensions of existing toilet stalls, operability of door hardware and toilet fixtures, corridor widths, existence of elevators, and existence of signage for the disabled. In addition, if the programs in the building are to remain, information should be developed on the nature of these activities in terms of their function, operational characteristics, and space needs.

Historic Features Inventory: This inventory consists of surveying the building to determine its overall historical and architectural significance and, specifically, to determine which of its architectural elements are worthy of preservation. Special attention should be given to those aspects that might be adversely affected by accessibility modification. Information involving historical evaluation of the building and proposed changes is necessary to obtain the required approval of federal, state and local projects

protected by historic preservation legislation if the project will result in building alterations as discussed in chapter 1, "Historic Preservation Legal Protections." Thus, this information will be required in many cases.

A determination of the historic value of the building may already have been made, as indicated by its listing in the National Register of Historic Places or in a state or local register of historic resources. However, a building cannot be assumed to be without historic value if such a determination has not been made. Many buildings of historical signficance have not yet been surveyed or, if so, have not been officially placed on a historical register. In the case of accessibility retrofitting accomplished with Federal aid, it is the responsibility of the federal agency involved to nominate the building to the National Register.[20] Local preservation organizations or the State Historic Preservation Officer can offer guidance on how to go about obtaining a professional survey and evaluation of historic resources.[21]

It is important to remember in this inventory that the building's historical integrity encompasses not only the unimpaired quality of the original architectural materials, but also any significant additions or alterations made over the building's life. Later changes that do not detract from the original features are often worthy of preservation in their own right and also deserve to be respected within an accessibility plan.[22]

Determination of Disabled User Needs

Procedures for determining the potential needs of the disabled person visiting a historic building or taking advantage of program activities housed within a historic building are outlined in the following section.

Types of Disabilities: Those involved in accessibility planning for a historic building need to be aware that people with a wide range of disability types can be expected to use the building, and that their various disabilities must be accommodated either architecturally or by the way program activities are carried out within the building.

Although this report has concentrated its discussion on providing for the mobility impaired in general, it should be remembered that this group includes several types of motor impairments: 1) non-ambulatory disability (wheel chair confined), 2) semi-ambulatory disability (those who must use aid when they walk), and 3) coordination disabled people (those who have impaired balance or muscle control of the extremities but who can walk unaided with some difficulty).

In addition, impaired sensory perception also affects accessibility in historic buildings and should be planned for. Blind persons have special mobility and orientation problems that must be taken into account; whether they are able-bodied or disabled, blind persons cannot experience a

historic building as the sighted can. In those historic buildings maintained all or in part for the display of the building itself, it is essential to address the special needs of the blind, especially those involving interpretation and touch.

The deaf also require special interpretive programs, and, in addition, need visually displayed warning signals in case of an emergency.

Basic Functional Requirements: Disabled user needs for accessibility can be set down as a group of specific planning goals:

- Site access up to and around building
- Building ingress and egress
- Movement through publicly accessible part of building
- Accessible toilets
- Amelioration of dangerous conditions
- Directional and instructional signs
- Historic interpretation of building (when part of a general prgram).

Selection of Appropriate Methods for Providing Access

After collecting and evaluating the background information, there is the more difficult task of selecting an appropriate method or methods that best respond to the specific needs of both building accessibility requirements and historic preservation.

The three general approaches to providing access are program or activity changes; portable architectural devices; and architectural changes. These approaches are listed below in order of least to greatest physical alteration to a building.

- Program or activity changes: These changes involve rearranging program functions to make them accessible, thereby avoiding direct architectural changes. Providing interpretive materials and devices to simulate a service or experience offered elsewhere in the building is also included.

- Portable architectural devices: These are building components of a temporary nature that can be removed or replaced without resulting in damage to historic materials. Some may require a personal aide because of their particular operation or configuration. Use of portable architectural devices may be desirable in cases where 1) special facilities for disabled people are only needed for a short time, 2) special considerations require that no alteration be made to the building

fabric, or 3) the ability to temporarily remove the device for special occasions is desirable.

- Architectural changes (reversible and non-reversible): Reversible changes do not involve the removal of significant amounts of historic finish or structural material and leave either no damage or easily repairable damage to those historic finishes, details, and/or design and spatial characteristics involved. Non-reversible changes involve the removal of significant historic finishes details, and/or design and spatial characteristics. They often have a negative effect on historic buildings and therefore should be avoided.

Figure 9 indicates the relationship between the three categories and their capability to satisfy program accessibility requirements (section 504) and architectural accessibility requirements(Architectural Barrier Act and other laws). It should be noted that methods incorporating program or activity changes satisfy only program accessibility while the other methods--portable architectural devices and architectural changes--can satisfy both program and architectural accessibility.

It may often appear that there is only one basic approach that either can or needs to be followed in order to make a historic building accessible. The possibility of achieving a design solution, which permits maximum retention of the historic building's significant features, is greatly increased if as many alternatives as possible are considered in the planning approach. In addition, an overall plan may include combinations of the three basic categories that, taken together, respect the historic integrity of the building and provide adequate access for the disabled under the law.

Finally, selection of any method for providing access that involves architectural changes should follow generally recognized criteria for work on historic buildings. Such criteria have been most comprehensively set forth in "The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings." These standards are included as appendix C for use throughout the accessibility planning process.

Program or Activity Changes

Consideration should be given to moving an inaccessible activity to an accessible location within the building or sometimes to an entirely different, possibly new, accessible building. For example, an inaccessible service or function may be made accessible by relocating a single meeting or conference room in an accessible space. Using this concept, a social services organization located in a historic house could rearrange its use of floor space to provide one ground-floor room easily accessible to disabled individuals where all services could be offered. Thus, inaccessible second-floor rooms or first-floor rooms, inaccessible because of too narrow corridors or doorways, could be

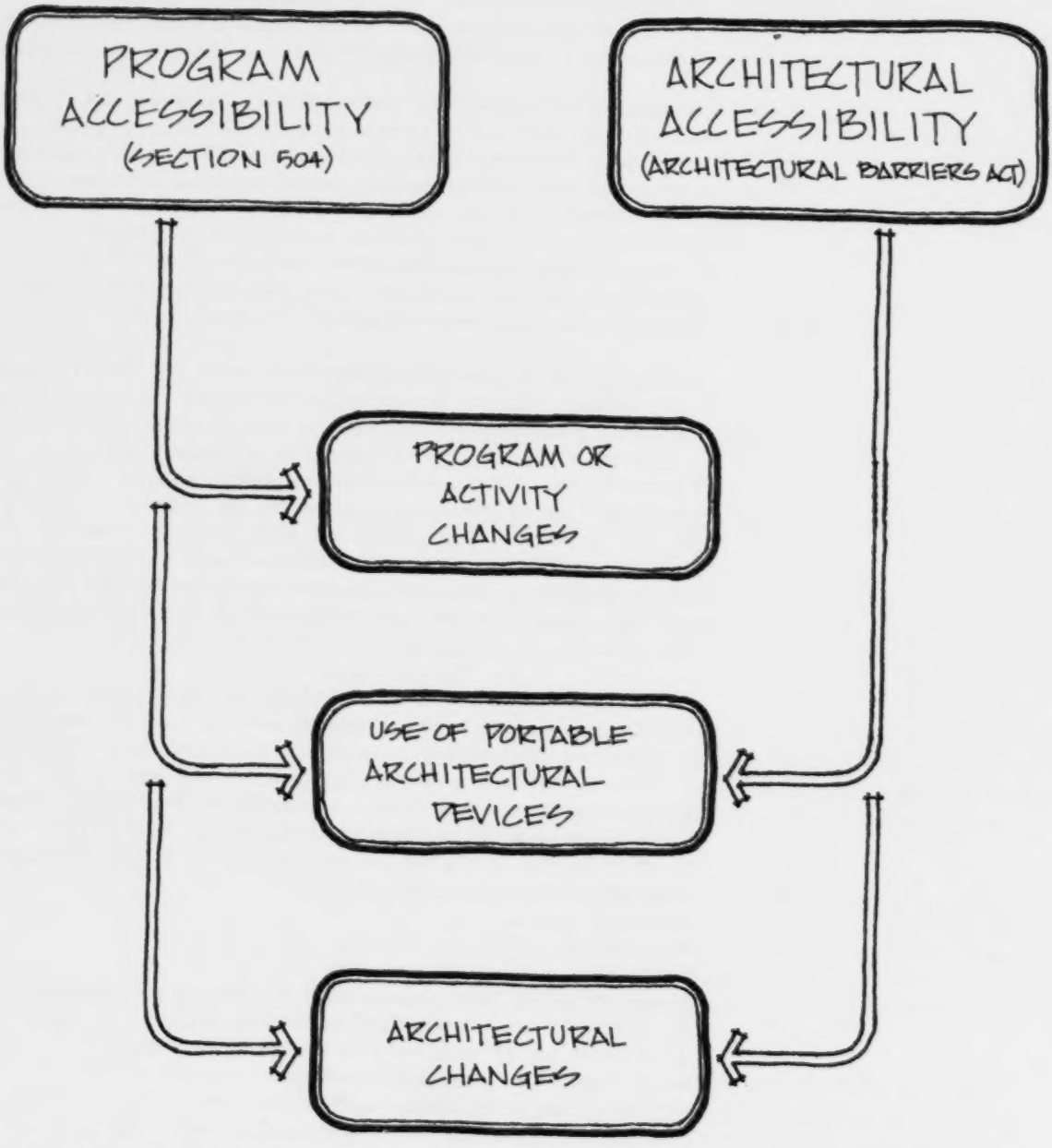
PROGRAM ACCESSIBILITY (SECTION 504)
ARCHITECTURAL ACCESSIBILITY (ARCHITECTURAL BARRIERS ACT)
PROGRAM OR ACTIVITY CHANGES
USE OF PORTABLE ARCHITECTURAL DEVICES
ARCHITECTURAL CHANGES

Figure 9: Relationship of Program Accessibility vs. Architectural Accessibility. To satisfy accessibility, whether it be program or architectural, there are three possible solution methods. All three satisfy program accessibility, but only the last two achieve architectual accessibility. Illustration: Robert P. Meden.

avoided. In special cases where the building itself is being historically interpreted, relocating the interpretive activity to an entirely different building may not comply with the intent of section 504 program accessibility requirements.

For the most part, however, using a single method outlined below, or a combination of methods, programs, and services, historic buildings can be made accessible to disabled persons:

Alternative Experience: In the interpretation of a building, such as a display to commemorate a historic theme, it may be possible to provide the experience of an inaccessible part of the building in an accessible location through techniques such as audio-visual aids or models and dioramas (see figure 10). Tactile interpretive aids such as models are especially important to the blind (see figure 11).

Service Delivery to Disabled User: It may be feasible to take some non-interpretive functions housed in historic buildings directly to the homes of disabled persons or to some other convenient location. In such cases it is imperative that the availability of these services be made known to the disabled community.

Aides and/or Scheduled Access: In many situations it may be possible to provide access through the use of trained staff aides who can assist disabled individuals with certain architectural barriers. Aides may be provided by the subject facility, by service organizations, or by the disabled individual. Normally, this service is provided at set times or by appointment. For example, an aide could assist a person confined to a wheelchair through a doorway too narrow to pass through unassisted but still wide enough for a wheelchair. These methods are most workable where a facility's access is controlled (through the use of guards, guides, docents, and so forth). It will be necessary in such cases for the aides to receive proper training in order to provide assistance in a courteous and expert manner.

Equipment Aids: It may be possible to use special equipment in order to avoid architectural alterations. For example, a special narrow wheelchair that accommodates especially narrow passageways or doorways could be made available. Many other equipment aids such as headsets, binoculars, magnifying glasses, or special printed information are also available, for those with impaired sight or hearing.

Figure 10: Alternative Experiences. At "Trout Hall" in Allentown, Pennsylvania, the historical society has utilized audio-visual aids to assist in the interpretation of spaces which are inaccessible. This can be useful not only for the disabled but also at sites where current restoration work prevents access or where funds are insufficient to allow it to be open to the public. Photo: Courtesy of the Lehigh County Historical Society.

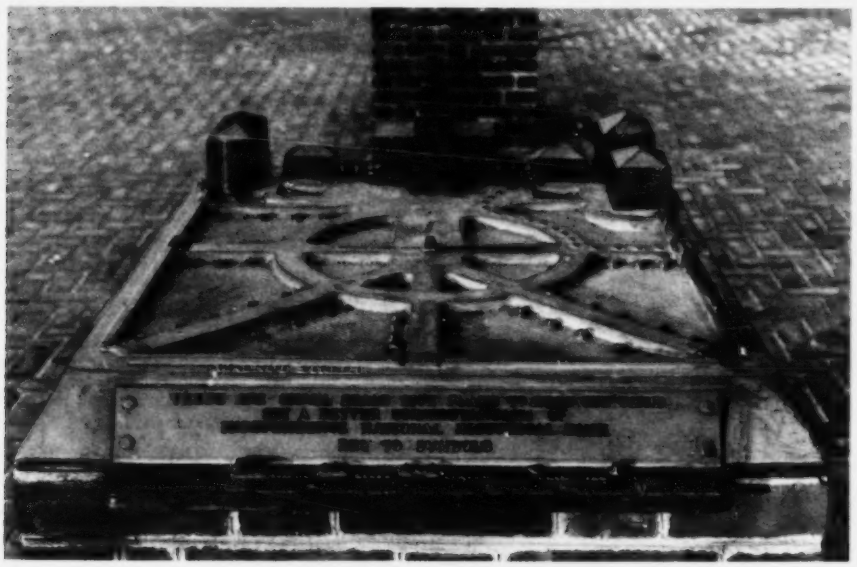

Figure 11: Tactile Interpretive Aids. Small scale site plans in the form of a bronze model are helpful to the blind in understanding spatial relationship. In this particular situation, Independence National Historical Park in Philadelphia, Pennsylvania, the site takes on a whole new dimension for the visually impaired. Not only does the model provide a feeling for proportion, but indicates the critical location of various barriers that might be encountered. Photo: John H. Myers.

Portable Architectural Devices

Ramps: Most of the portable architectural devices are simply ramps used to overcome barriers caused by level changes (see figure 12). To be portable and easily usable, such ramps are limited to a size that can overcome only a few steps (approximately 15 vertical inches). They are usually set within the flight of steps and so must be fabricated to accommodate the steps beneath. They are available in stock assemblies as well as custom designs (see figures 13 and 14). Portability also limits the length of the sections-- two or three piece ramp decks are the most common. Many portable ramps are metal(either steel or aluminum for reduced weight). Many others are wood, but these are usually not as portable as the metal ones. Although many portable ramps have too steep a slope to meet ANSI A117.1 standards, they are often determined to be acceptable, especially when a trained staff aide is available for assistance. Because they are portable, their use seldom results in damage to historic finish materials; however, since the design is inherently centered on achieving portability and not visual sensitivity, they can detract from a building's historic appearance if placed at an architecturally significant entrance. Another consideration in using portable ramps is that the disabled user would most likely find a permanent solution preferable because of its structural superiority and reliability of placement, that is, a permanent ramp would be in place regardless of time of day, personnel, or environmental conditions.

Vertical Wheelchair Lifts: These lifts may be used portably, but because their weight and accessories preclude easy movement, especially on the interior, their description has been included under "Architectural Changes" below.

Architectural Changes

Building Site Changes: Historic landscape features should be considered when providing site amenities for the aid of disabled persons. The provision of specifically located and designed parking spaces for disabled people is required when general parking is provided, but this should usually not present a problem at a historic building; however, consideration should always be given to any negative relationship parking facilities may have to historic landscape features or to the building itself (see figure 15). Historic walkway slopes, steps, and paving materials should also be evaluated for both preservation and accessibility requirements (see figure 16). Typically, standards for walkways specify a minimum width of 48" and a slope not exceeding 1 in 20. Periodic level zones may be required on long gradients as is level access at all curbs. Surfaces should be textured and firm enough to resist slippage. If necessary to preserve the texture, slope, steps, or dimensions of a historic walkway, an alternative walkway should be considered which is accessible, does not detract from the historic landscape,

Figure 12: Portable Ramp. Under certain circumtances where there are only a few steps, a simple portable wooden ramp will often suffice. They rarely compromize the character of the structure, and can be easily removed if necessary. Photo: Charles Parrott.

Figure 13: Portable Ramps. In some situations a portable ramp can be used to overcome a series of steps without damaging the historic materials. On the other hand, consideration should be given to esthetics and every attempt made not to detract from the character of the space. This ramp, unfortunately, is both too steep and out of character for the historic site. Photo: Hugh Miller.

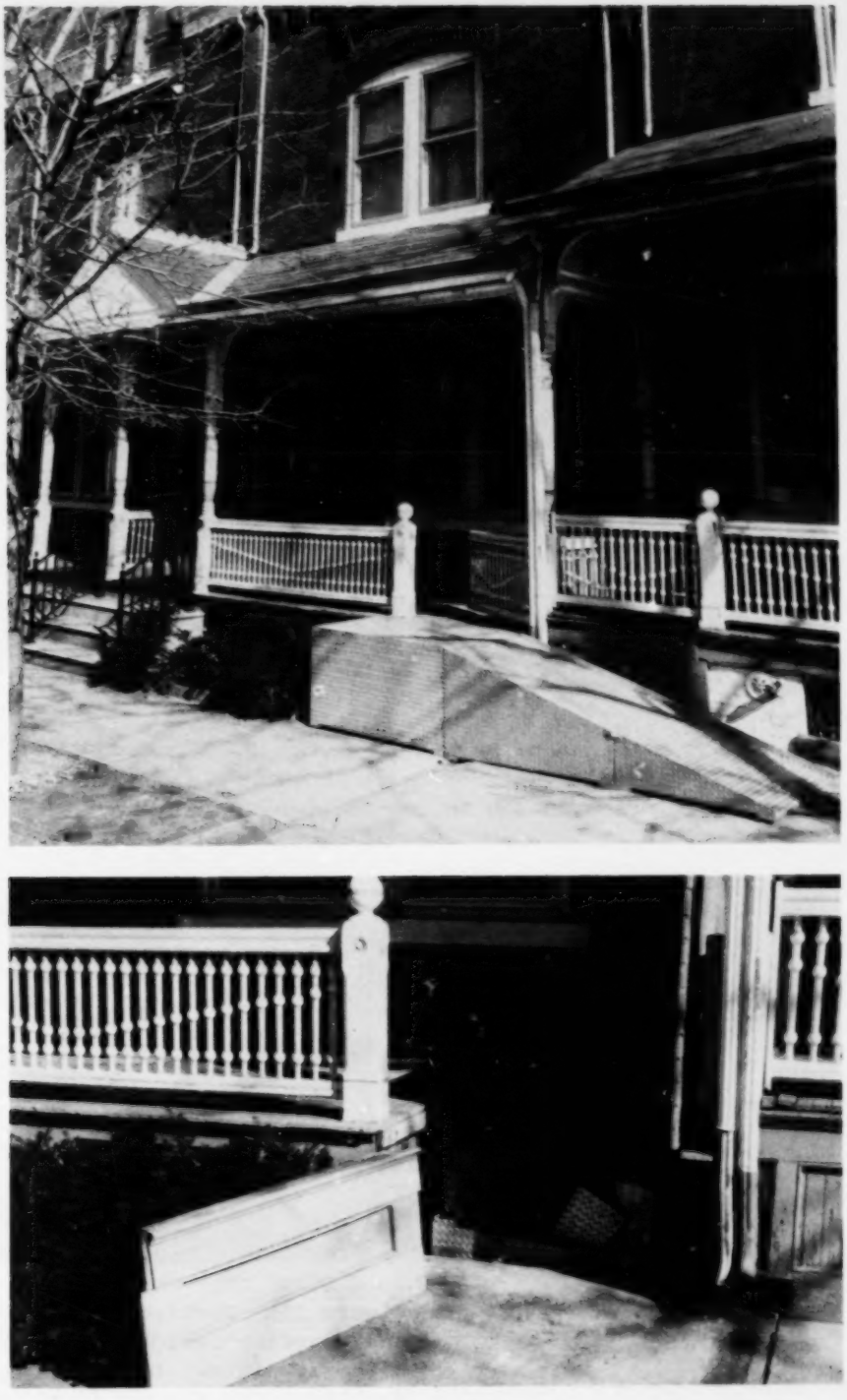

Figure 14: Frank Buchman House, Allentown, Pennsylvania. A successful solution to the problem of accessibility with historic structures provides appropriate alternatives to the barriers without disturbing the historic character of the building. At the Buchman House, a private residence, the portable ramp can be disassembled to smaller sections and stored in a convenient location under the porch by swinging hinged doors, railing and floor partitions. When the ramp is stored, the building maintains its historical image. Photo: Charles Parrott.

Figure 15: Parking Considerations. Sympathetic design is an important factor when considering parking requirements at historic sites. Depending upon conditions, proper use of architectural elements and landscaping can enhance and reinforce the condition of accessibility. Photo: Baird M. Smith.

Figure 16: Site Features. Besides changes in grade, consideration should be given to the choice of various materials and textures to define spaces. Photo: Hugh Miller.

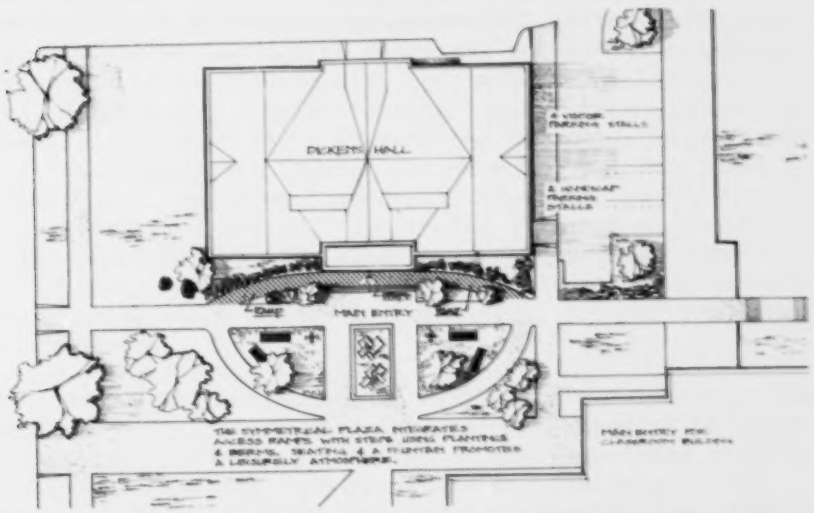

Figure 17: Grade Changes at Building. A creative solution was proposed for Dickens Hall on Kansas State University campus, in dealing with a grade change at the entrance of the building. The portico floor level was extended and the short flight of steps were moved outward from the building. Two gently sloping ramps were then added on each flank leading to the main sidewalk. The symmetry reinforces the character of the building site and maintains the basic visual effect at the entrance with only a minimal amount of alteration. Illustration: Courtesy of the Association of Physical Plant Administrators.

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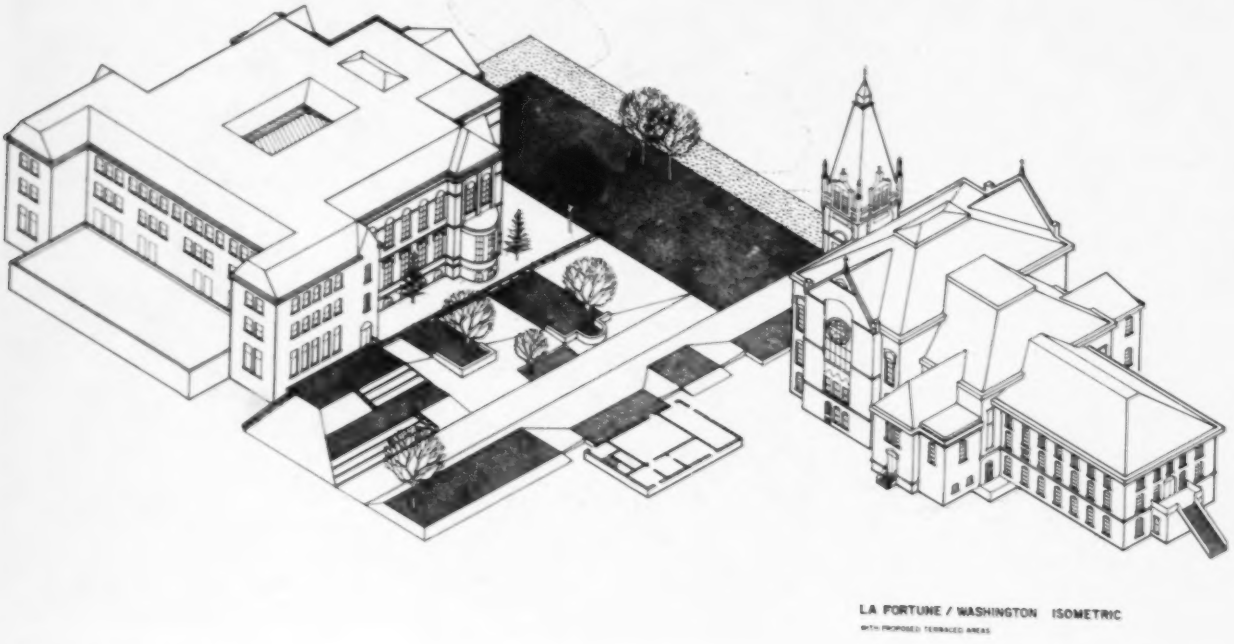

Figure 18. Exterior Ramps and Grade Changes. In many cases, consideration should be given to achieve building accessibility by change of grades with adjacent site features rather than altering building features. In this method the historic elements of the buildings remain unchanged. An example of this was achieved at the Universite of Notre Dame, in South Bend, Indiana with the walkway (shown with railing) between LaFortune and Washington Halls. Illustration: Courtesy of the Association of Physical Plant Administrators.

and permits overall site preservation. It is essential that the building be approachable by disabled people, not only to gain access to it, but also to be able to fully appreciate the significant exterior architectural qualities of the building and the important historic features of the landscape.

Grade Changes at Building: It may be possible to provide an accessible entrance by regrading and repaving the exterior of a historic building. Grade changes at the building, like walkways, are limited to slopes of not more than 1 in 20. Any slope greater than this and longer that 6'0" is actually a ramp, must meet the physical requirements of a ramp, including railings. (23) Such a grade change is usually limited to overcoming only one or two steps. More extensive grade changes will usually begin to detract from a historic building's architectural character and may lead to deterioration of masonry or other building materials against which any fill material may be placed. A technique that allows retention of short flights of steps while also providing a graded approach to the top landing of such steps involves moving the steps forward to obtain an accessible landing and regrading to provide sloped access to the landing at one or both flanks of the steps (see figure 17). Thus, the visual effect of the steps, possibly even the relocated historic steps themselves, are preserved in an only slightly altered form. This solution is acceptable in many situations.

More ambitious grade changes and the addition of new site features (those covering large areas or affecting significant historic site features) should be undertaken only when it is assured that the historic quality of the building and its site are not impaired by the alteration (see figure 18). If it is possible to design major grade changes so they are independent from the building (see figure 19a), any visual and physical change to the historic relationship of the building to its site can be minimized. Below grade changes can also be considered (see figure 18). Their advantages are similar to those described in below grade ramps discussed below, and, in addition, require no railings.

Curb Cuts: The configuration of the typical street corner curb cut or curb ramp may on occasion be used in an entry to a historic building to overcome single step level changes. A curb cut is often more desirable for one step level changes than a built out ramp with handrails, providing adequate level area is provided at each end and the alteration of historic flooring is considered acceptable (see figure 19b).

Ramps: When carefully designed and installed, ramps of a relatively permanent nature can be reasonably well integrated into the exterior architectural environment of many historic buildings. The maximum slope usually permitted for a ramp, 1 in 12, will require a lengthy and often obtrusive addition to reach doorways only a few steps above grade. However, there are various design techniques

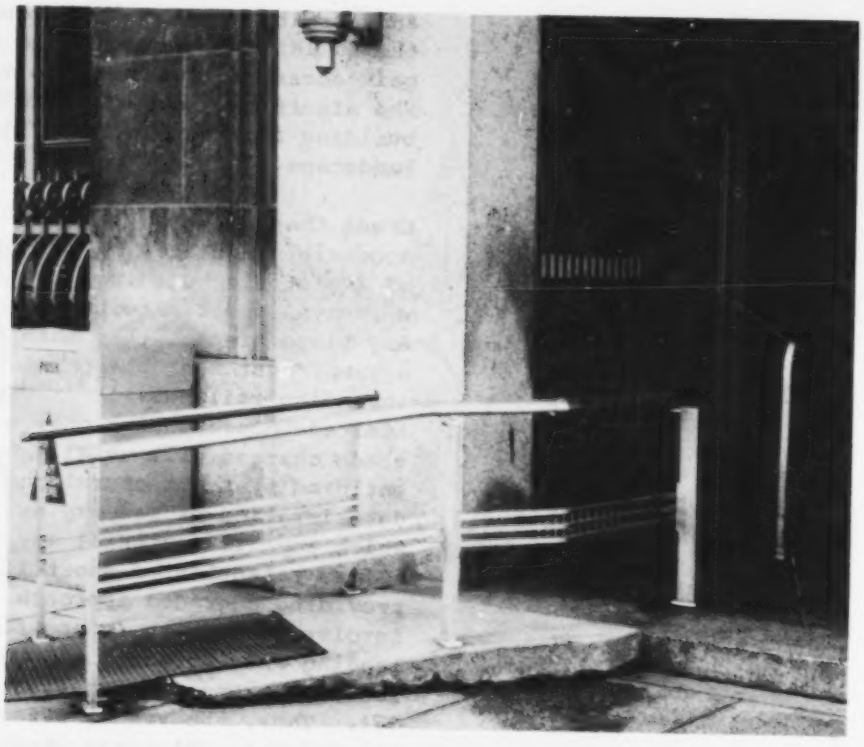

Figure 19: Curb or Stair Cuts. In the two solutions shown above (a and b), the first is awkwards, needing a ramp and handrails extending out from the building. In the second, a simple ramp cut into the first stair resulted in a successful solution, which achieved accessibility with minimal impact to the character of the building. Photo: Charles Parrott.

Figure 20: Alternative Building Entrances. Successful entry to the Auditor's Building in Washington, D.C., was achieved by designating the side entry for disabled user access, thus, no change in the primary entrance (the one with the steep stairs) was necessitated. Photo: Charles Parrott.

Figure 21: Inconspicuous Ramps. In many instances the main entrance of some architecturally significant structures do not easily adapt themselves to the addition of ramps. However, in the case pictured here, the architectural elements adjacent to the building provide a sympathetic resolution because a ramp can be inconspicuously placed between the exterior and the balustrade walls. Photo: Charles Parrott.

that can reduce the potential negative impact. Usually, principal entrances other than the main historic entrance should be considered as the prime ramp location. The architectural character of original main entrance elevations is usually adversely affected by a ramp because of its intrusion on the composition of the main facade. In addition, less architecturally imposing entrances of some buildings can often be more successfully adapted for a ramp because they tend to be located nearer grade level, thus requiring a far shorter length of ramp (see figure 20).

Above grade ramps may be better adapted to certain types of historic entryways than others. For example, those flanked by heavy pedestals or cheek walls may often allow an acceptable screening of the ramp by routing it behind the pedestal parallel to the wall of the building (see figure 21). Landscaping appropriate to the historic appearance of a building may also help screen an intruding ramp built parallel to an exterior wall. Of course, the ramp should not be so well hidden that its users cannot be properly directed to it.

Although an above grade ramp parallel to the building wall can often be successfully introduced to a historic building, there are two conditions under which the integrity of the primary entrance could be jeopardized: first, the existing landing at the top of the steps may not be deep enough to form a wheelchair landing (see figure 22), and second, one or more additional steps such as a high threshold may exist between the landing and the door (see figure 23).

In addition to the possible esthetic impairment a ramp may impose on a historic property, a ramp installation may create a physical obstruction or hindrance to the able-bodied user of the building. Ramps and ramp platforms built over original steps can block or constrict normal traffic flow (see figure 13). Interior ramps like those at high thresholds also often create problems in historic buildings because level changes of less than one floor are usually associated with significant interior spaces desirable for accessibility. Interior level changes are most commonly associated with entry vestibules, which can sometimes easily be converted to ramped passages (see figure 24).

Wherever possible, a below grade ramp should be considered because installation locations are less obtrusive; they may often be located in an existing or widened areaway (see figure 25). If space permits and any conflict with the historic building or landscape is resolved, a below grade ramp--treated as a completely new element--can be considered. As with some above grade ramps and grade change configurations, imaginative and innovative designs that are in character with the original architectural scheme can be considered. Below grade access to a building may enter maintenance or basement storage areas but, in such cases, thought must be given to providing a dignified link between the exterior ramp and an interior elevator through such unfinished service areas.

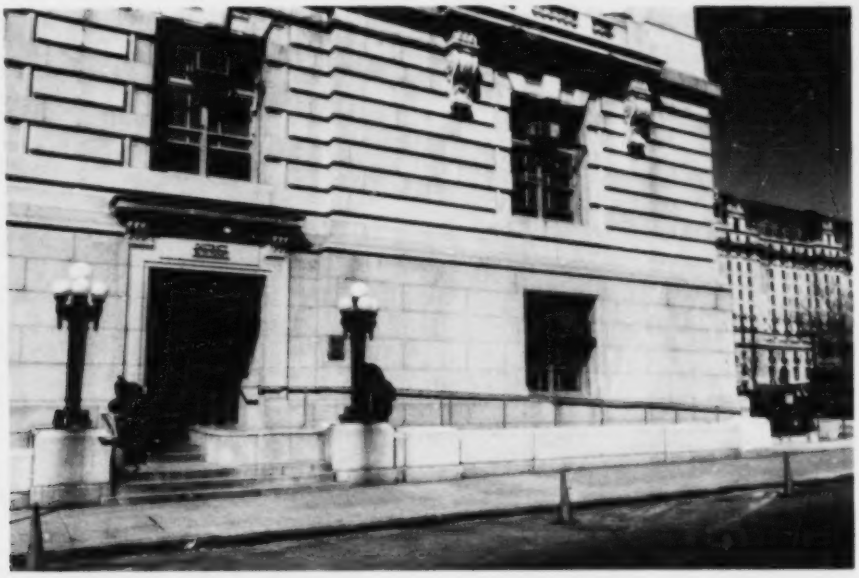

Figure 22: Ramped Entrances. With all good intentions, the designer of this ramp missed two important considerations: 1) the addition of the ramp and more important the bulky landing set within the door frame have both seriously compromised the character of the entry facade; 2), the 90 degree corner on the landing is dangerous and difficult for many disabled individuals to negotiate. Alternative methods of entry should have been utilized in this case. Photo: Charles Parrott.

Figure 23: Ramp Over Steps. Compared to figure 22, these ramps and railings are well designed and illustrate a good choice of materials and provide good accessibility. Photo: Baird M. Smith.

Figure 24: Vestibule Alternative. When confronted with a short series of steps in a long vestibule as is found at the Pension Building in Washington, D.C., an alternative might include converting the entire entry into a long ramp. The historic materials of the walls and ceilings are maintained and the character and emphasis of the entry is only minimally altered. Photos: Charles Parrott.

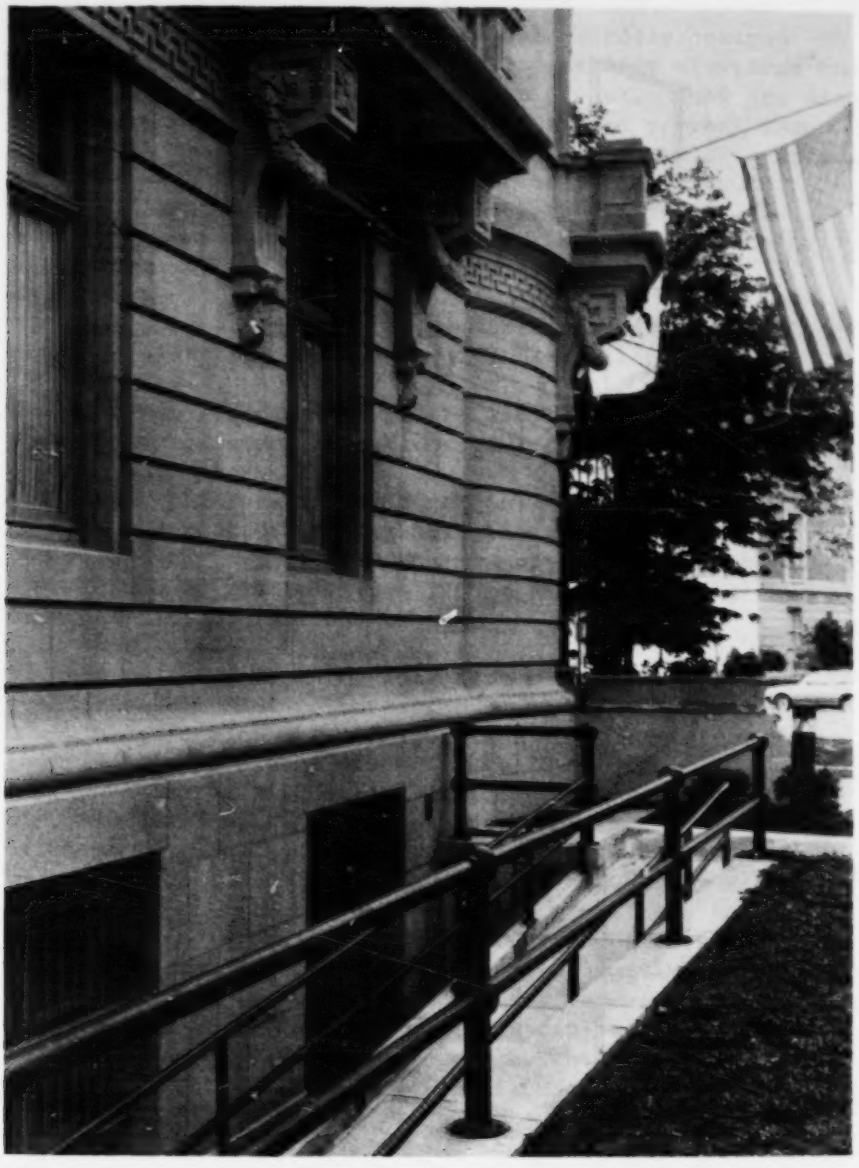

Figure 25: Below Grade Areaways. On occasion a structure may include a light well or areaway. Originally designed to provide adequate light, ventilation, and sometimes emergency egress, light wells can be adapted to serve as a below grade ramp. A successful example of this is located at the National Trust for Historic Preservation Headquarters in Washington, D.C. The ramp is situated near the main entrance and is easily accessible and readily visible. Photo: Walter Smalling, Jr.

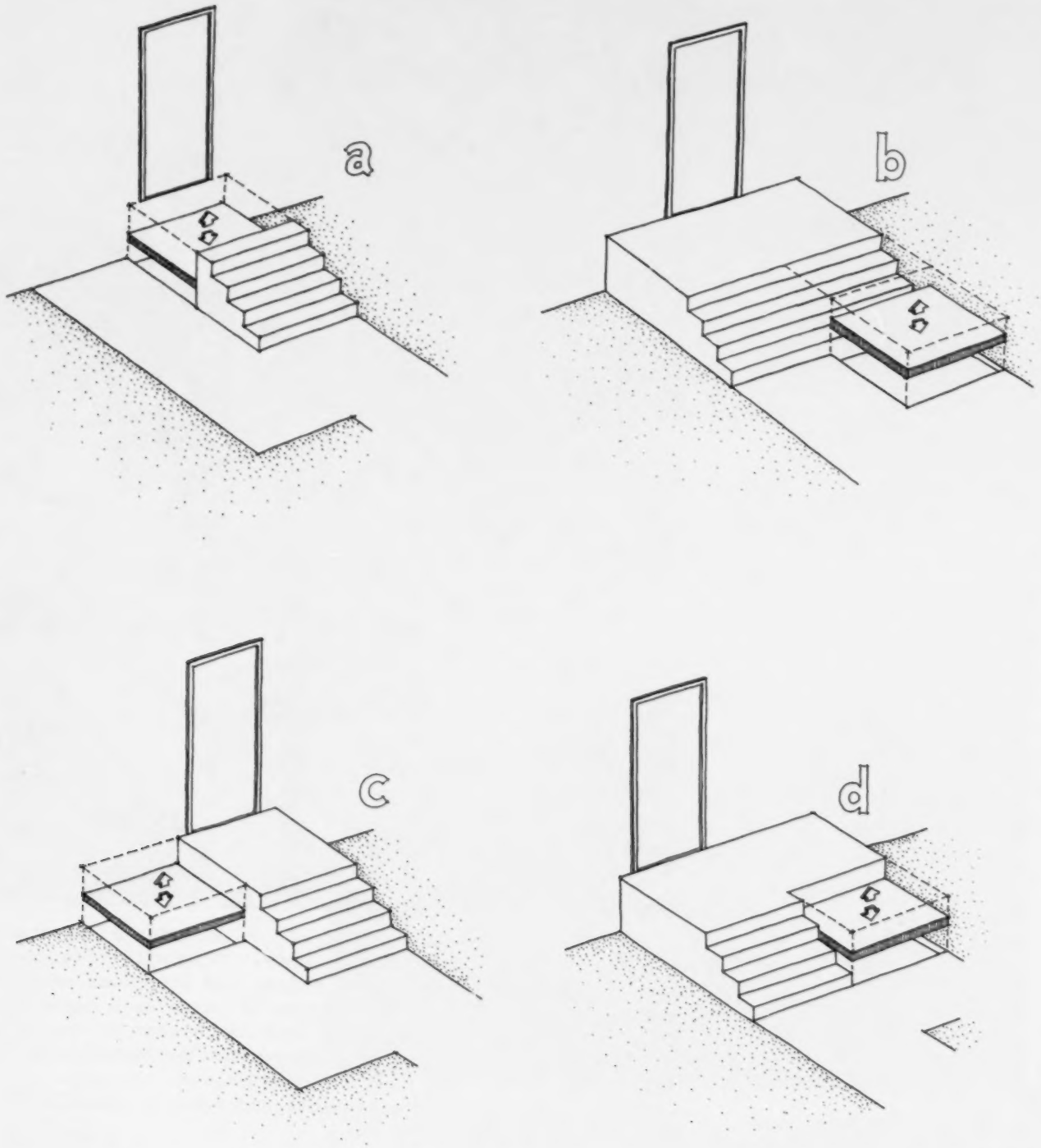

Figure 26: Vertical Lifts. If a vertical lift is to be used, the different configurations (shown in a, b, c, and d) present a variety of possible solutions. The different possibilities would, of course, need handrails and appropriate safety devices in actual use. Illustrations: Robert P. Meden.

Vertical Wheelchair Lifts: These electrically powered devices are small, self-contained and cabless elevators that can overcome level changes less than 6 feet. They are used in cases where space or esthetic limitation prevent ramps and can be used on either the interior or exterior. Because of their weight, their useful interior portability is limited. They can be installed in four different configurations involving varying degrees of intrusion or alteration. The four configurations are:

1) At top of steps (see figure 26a). Requires removal of steps to link top of steps with floor of lift.

2) At base of steps (see figure 26b). Requires bridging to connect top of steps with floor of lift.

3) Within platform (see figure 26c). Requires removal of part of the platform and usually the railing.

4) At face of platform (see figure 26d). Requires removal or alteration of railing.

The use of these four vertical lift configurations are evaluated according to three important criteria in figure 27. The effect of any configuration must be evaluated individually. However, from figure 27, it can be seen that configuration 1a will seldom be acceptable for use in a historic building. Alterations prompted by the use of one of these four configurations usually revolve around attempts to screen the device for both esthetic and safety reasons. Platform installations involve either removing a section of a porch or podium railing to achieve connection to a raised platform where the lift is left exposed immediately adjacent to the platform (configuration 4d), or removing a section of the platform itself so that the lift can be set within the platform and be partially screened by the remaining structure (configuration 3c) (see figure 28). When used at a flight of steps, removal of the steps should be avoided (as in configuration 1a). The bridging methods from the steps is usually preferred since it requires minimal historic material alterations, even though this kind of installation is usually more visually obtrusive (configuration 2). In this configuration it is necessary to place the lift at the base of a flight of steps and to bridge the steps with a portable platform spanning between the top step and floor of the lift (see figure 29).

Vertical lifts can be used without assistance by most disabled individuals, but it is often necessary to lock them when they cannot be reasonably monitored, for example, when they are out of doors or in hidden locations. In these cases, special arrangements must be made for their use. During bad weather, when such lifts are not under cover, their use can create a hardship for the disabled user. Also, like any other mechanical device, they must have periodic maintenance to remain dependable.

For all of these reasons, the disabled user tends to prefer a ramp; however, the vertical lift can often be a better

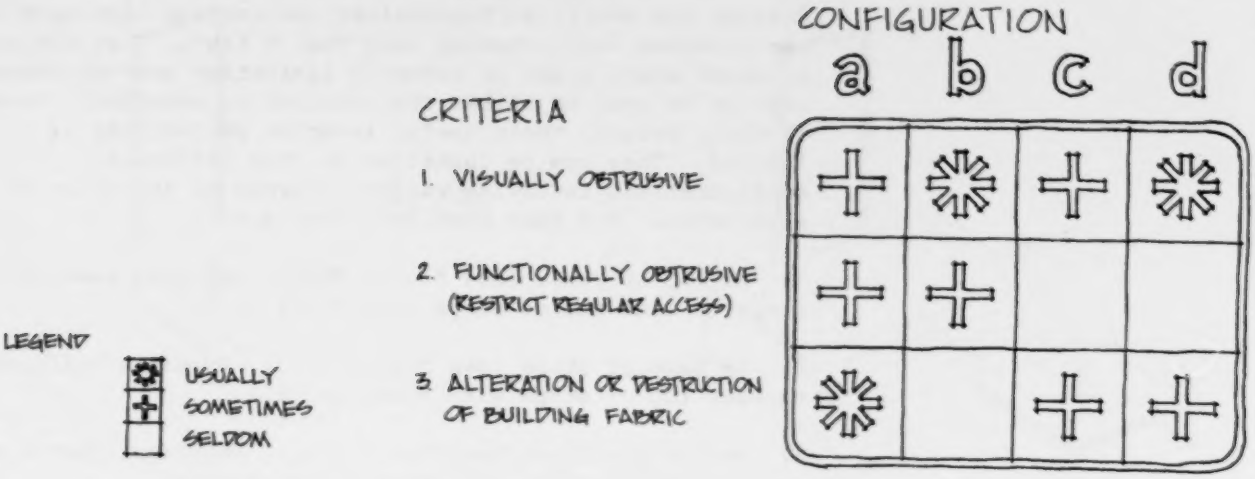

Figure 27: Vertical Lifts Evaluation. Although each case (four cases in figure 26) needs to be evaluated on an individual basis, the chart helps to assess the degree of obtrusiveness. Depending on the particular installation and the degree of flexibility, it is apparent some solutions can be more successful than others. Illustration: Robert P. Meden.

solution in terms of preserving the historic appearance of a building. Before the use of a vertical lift can be seriously considered, however, it must be deemed permissible within the context of the applicable building code.

Inclined Stairway Lifts: Installed on existing stairs, inclined stairway lifts may be used to connect separate stories in lieu of an elevator, although their practical use in historic buildings is usually limited because they often require an inordinate amount of assistance and can be both an obstacle and an eyesore. They generally require minimal architectural alteration, however, and are most often feasible for use in historic buildings maintained as private residences.

Two types of inclined stair lifts can be used to transport disabled persons along single flights of steps. Their use is limited to interior or protected exterior operation. One type contains its own seat and integral electric power uint, all of which moves along a track at one side of the staircase, allowing non-disabled usage adjacent to it (see figure 30a). This type does not accommodate wheel chairs, and may not be permitted for use in public buildings for safety reasons because of its open configuration.

The other type of inclined stair lift does accommodate a wheel chair. This type contains a rail at each side of the stair-case between which runs the wheelchair platform (see figure 30b). The power unit does not move with the platform, but is located in a stationary position at the base of one of the rails. The power unit is typically floor mounted, which leaves it exposed. To conceal the power unit, it would be necessary to install it behind the adjacent wall or beneath the floor. At rest, the platform sits on the floor at the base of the stairs, allowing unobstructed normal stair usage. At the top, the platform stops level with the top step. Essentially, the inclined wheelchair lift and the vertical wheelchair lift are constructed and operate in similar manner. Building code provisions may limit the use of the diagonal wheelchair lift, or require certain accessory features or assisted operation.

The use of either type of inclined stair lift has several limitations. Some models can only transverse a single, straight run of stairs. The rails and movable seat or platform obstruct the stairs to some degree, possibly creating a hindrance or hazard. Clearance, particularly for the wheelchair type lift, may also be a problem. Finally, the inclined lift tends to be visually obtrusive, especially the bulkier wheelchair lift; however, the effects of installation are generally reversible with little damage being done to historic finish materials and architectural alterations are minimal. Usually, only screwing the rails to the stair treads is needed. Like the vertical lift, the inclined lift requires routine maintenance to assure dependable operation.

Figure 28: Alteration of a Porte Cochere. At the Kearns Mansion in Salt Lake City, Utah, a drive-through porte-cochere was altered by moving the stairs out between the columns, creating a platform, with a power lift inserted at one side. Photo: Charles Parrott.

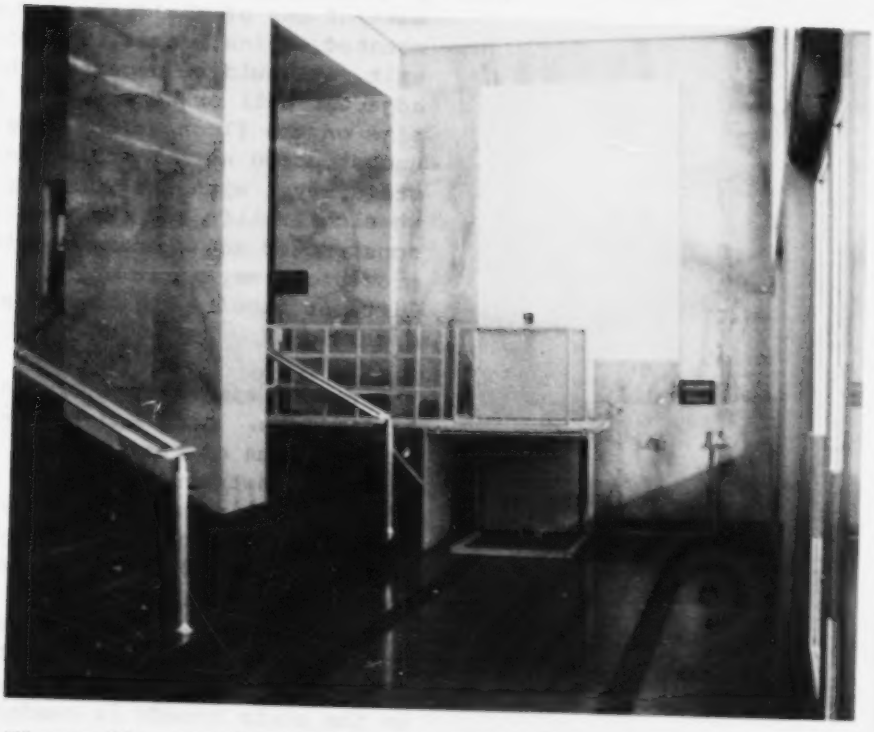

Figure 29: Vertical Lift with Bridging. Although this method may not be totally successful visually, it does provide good access with no damage on the historic fabric materials. Photo: Baird M. Smith.

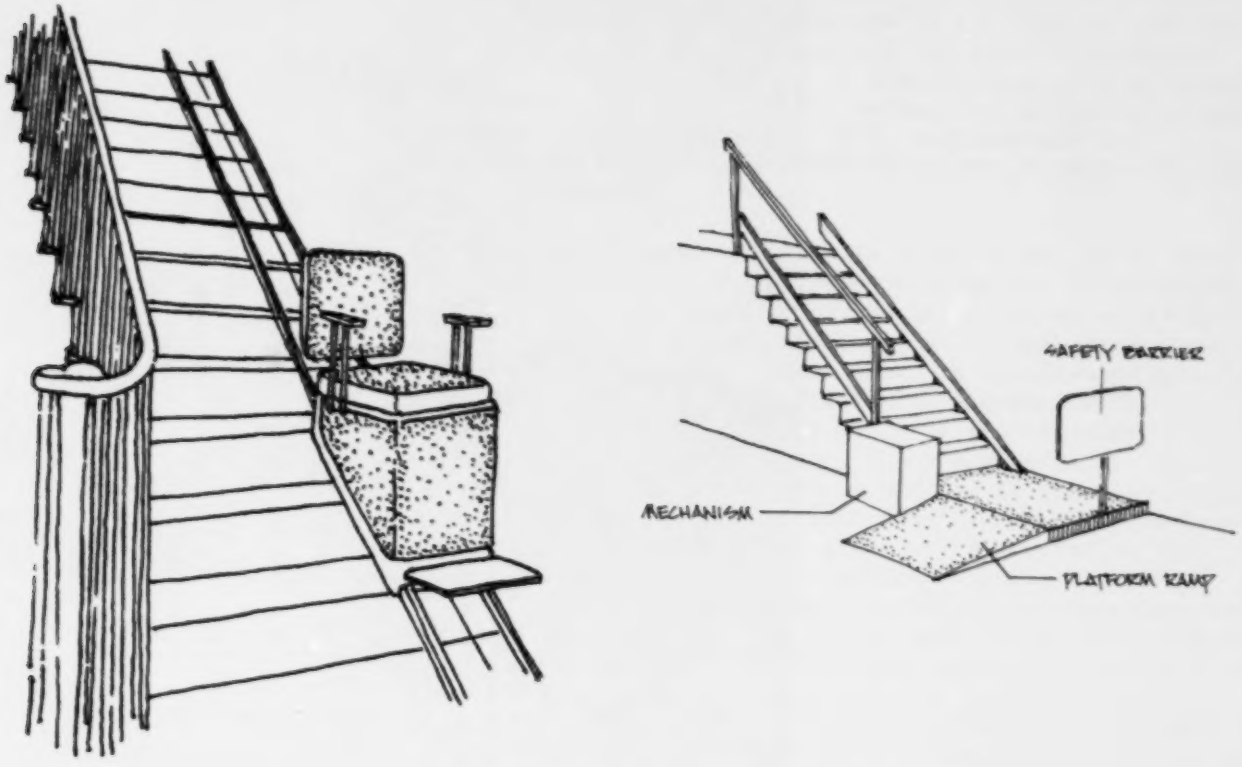

Figure 30: Inclined Lifts. In comparing the two systems, the lift with the chair (a) does not accommodate wheelchairs, but allows for non-disabled individuals to use the stairs at the same time. Whereas the platform lift (b) will transport a wheelchair, unfortunately, it prevents simultaneous use of the stairs. Although neither are visually attractive, the systems can be removed at a later date without the historic materials being removed or destroyed. Illustations: Robert P. Meden.

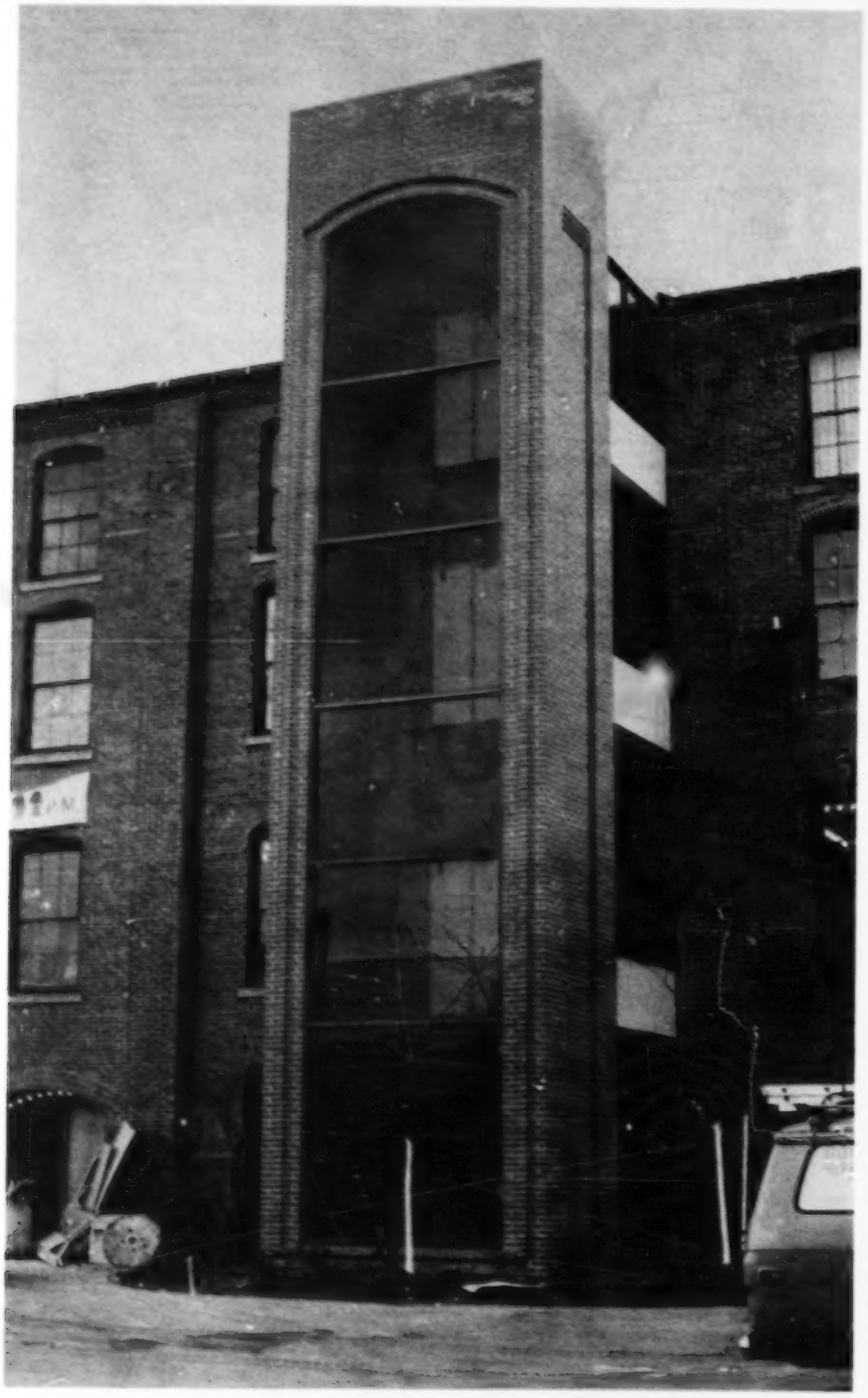

Figure 31: Exterior Elevators. Ideally, the first consideration should be to maintain a building facade without an addition of an elevator. But when not feasible, the new construction should be smpathetic to the existing structure. At the Quaker Square Complex in Akron, Ohio, the design of the attached elevator duplicates some of the features and proportions of the existing building, such as the slightly curved back lintel, the window panes being proportional to the single sash of the double-hung windows, and the use of brick. Photo: Robert P. Meden.

Elevators-Alteration of Existing: In situations where redesign of the elevator controls is all that is required to make them accessible, care should be taken to preserve associated finish materials of significance such as elevator surrounds. The retention of the decorative facing of many elevator doors is also desirable, and elevator cab alterations to improve accessibility should strive to retain those doors.

Elevators-New Installations: In historic buildings without elevators, floor to floor transportation for disabled people is sometimes best provided by the introduction of a new elevator because in most cases it can be much less obtrusive and less space consuming than floor to floor ramps or vertical inclined lifts. Placing an elevator within interior atria or open stair wells of architectural importance or on the exterior of any historically significant elevation should be avoided in order to maintain the integrity of these elements (see figure 31). Instead, placing it in new shafts or light wells located in less historically important parts of the building or along hidden, historically insignificant exterior elevations is generally preferable, even though such elevator locations usually require the removal of some original structural and finish materials (see figure 32). In smaller historic buildings where the penthouse of a cable-driven elevator would adversely affect the historic massing of the building, it is preferable to locate the equipment room beside, or below, rather than above the elevator shaft by using an "underslung" or a hydraulic type elevator. The advantages of the "underslung" elevator are that the hoisting sheaves are located beneath the top of the elevator and the hoisting machine is at the base of the elevator shaft. An advantage of the hydraulic elevator--the use of which is limited to buildings up to three or four stories--is that the equipment is all beneath the elevator cab, thus reducing or eliminating any breaks in the roof line. If space or structural limitations restrict the achievable size of the elevator cab to less than the required standard, a small elevator which might require an aide may be permitted and should therefore be considered.[24]

Choosing the location of a new elevator in a historic building is perhaps one of the most critical decisions in accessibility planning. The elevator should be conveniently located; at the same time, it should not have a negative effect on historically significant architectural materials or spaces (see figures 33, and 34). Because a new elevator will usually have an impact on important architectural spaces if installed within them, the following options should be considered in the early stages of design development:

1) placing the elevator in an area of lesser significance in a new concealed shaft, even if it pierces the existing floor framing and decking;

2) locating the new concealed elevator shaft adjacent to the circulation center of the building, if possible;

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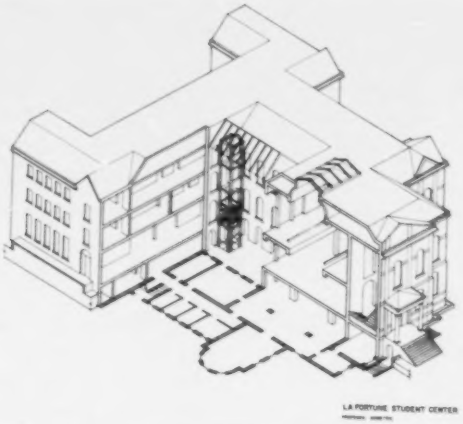

Figure 32: Interior Elevators. Every attempt should made to locate the elevator and shaft in an unobtrusive place, such as the interior court as pictured here. If a light well or closet shaft are not readily available, then consideration should be given to situating it in a manner not detracting from the appearance of the space and compatible with the character of the design. Photo: Courtesy of the Association of Physical Plant Administrators.

Figure 33: Interior Elevators at Stairways. The placement of an elevator shaft can critically affect the character of a space. In this particular situation, the elevator shaft, which was placed within the open well of a winding staircase, destroys the visual interrelationship of the space and obscures many of the architectural details on the ceiling and stairs. Photo: Charles Parrott.

Figure 34: Cooper-Hewitt Museum, New York, New York. An excellent example of minimal destruction to the historic fabric and the character of the space, is the incorporation of an elevator shaft where the organ (a) was originally placed. Every attempt was made to duplicate materials, textures, color, and details when the pipe organ was removed to accommodate the elevator as shown in b. Photos: Norman McGrath, Courtesy of Hardy Holzman Pfeifer Associates.

3) giving preference to locations away from exterior walls so that any equipment or clearance spaces needed at the top of the shaft can be contained beneath a pitched roof or located well back from the cornice of a flat roof. An elevator connecting three or more stories will usually require vertical venting through the roof. Thus, it will be necessary to consider the effect of this requirement on the roof surface as well. Shaft venting of an elevator connecting only two floors may, however, not be required,; and

4) locating the elevator so that the need to alter the building's structural system to support the added weight of the shaft enclosure and elevator equipment is minimized.

Doors-Existing Openings: Accessibility through historic doorways presents a difficult problem because, based on the required width standard (usually a 32 feet clear opening), they either <u>are</u> or <u>are not</u> acceptable. From a preservation standpoint, the widening of historic doorways is, of course, undesirable. Although it may sometimes be possible to widen the frame and retain most of the frame's original finish material, the same is not true of the door itself. The high cost and trouble of reproducing these widened doors is usually prohibitive where numerous interior doors do not meet the width standard. The result may be the wholesale destruction of historic fabric to provide wider doors that do not contain the historic detailing. Widening the door by attaching extension strips along the edge of the stiles may be an alternative to replacing the door. Replacing historic butt hinges with offset hinges can increase the clear doorway opening by the width of the door (see figure 35). In some cases the additional doorway width obtained may thereby satisfy the width requirement; however, these hinges are unsightly since they are surface mounted and must usually extend from the face of the door to be mounted on the projecting door casing.

Doorways under the width standard, but wide enough to admit a person restricted to a wheelchair (either a standard wheelchair, one fitted with a narrowing device, or a narrow wheelchair provided at the facility) can be retained upon approval of a program that will provide these services. Such compliance may satisfy program accessibility, but would need to be specially approved to comply with applicable architectural accessibility requirements.

Even if historic doors are approachable by and wide enough for the disabled, there are other aspects of existing doors that should be examined. Chief among them is door opening pressure. Operation by disabled persons requiring force of greater than 8 pounds is considered excessive. Thus, the opening pressure on at least the designated accessible entrance doors should meet this standard. Methods that will help reduce the opening pressure of both exterior and interior doors include ensuring that the hinges, door, and door frame are in proper alignment and condition, and that any door closers are adjusted or, if necessary, replaced.

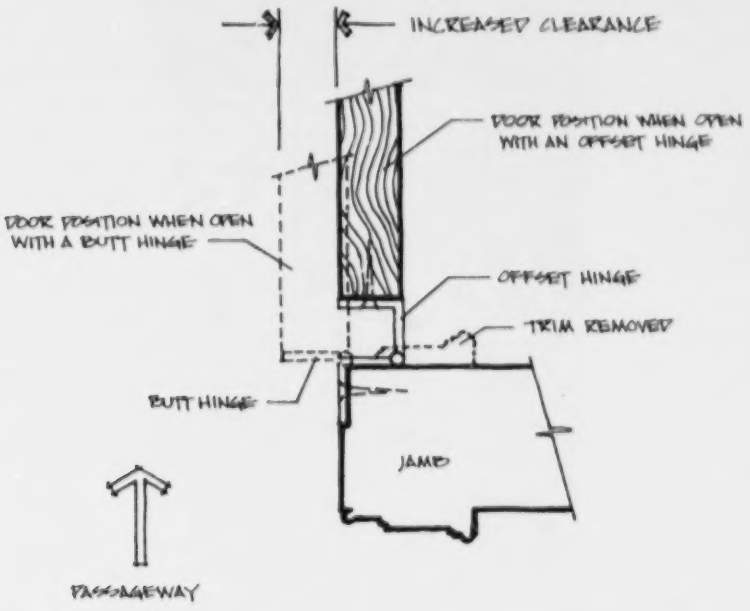

Figure 35: Offset Hinges. In some situations where clearance is critical and the width of a door swing or opening is just slightly too narrow, it may be possible to replace standard butt hinges with offset hinges. In doing so, the width of passage can be increased by perhaps 2 inches. Illustration: Robert P. Meden.

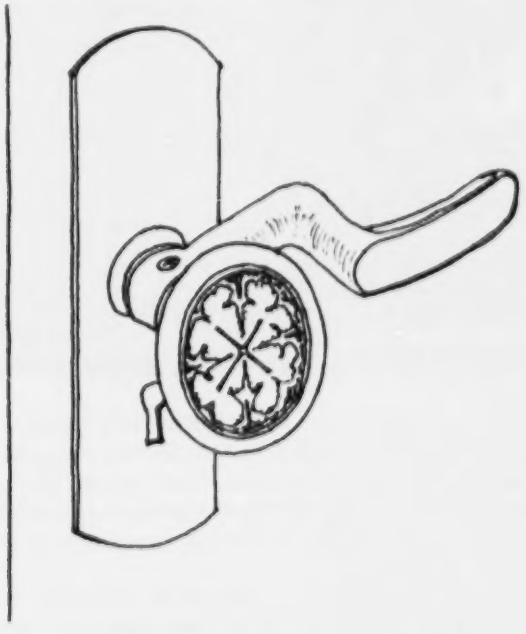

Figure 36: Alteration of Historic Doorknobs. Where doors with historic hardware (which are difficult to operate) would be used by a disabled individual, consideration should be given to altering them to improve operability. In this particular case, a custom designed lever handle has been attached to the historic hardware.

The round or knob door handles found on most historic buildings are difficult for many disabled persons to operate. In locations where they must be used without assistance, it is often felt necessary to replace such knob handles with lever handles; however, other alternatives which retain the historic handles may be feasible. For example, it may be possible to simply leave many interior doors open during operating hours. Another possibility is adding a compatibly designed lever handle without removing the historic handle (see figure 36).

Door weight, alignment, door closers, door hardware, and/or wind pressure singly or together may create a condition that makes it too difficult for exterior doors to be operated by disabled persons. In these cases it may be possible to install power operated equipment on the historic doors (see figure 37). Typical mechanisms for activating power operated doors are: 1) pressure mats; 2) electric eyes; and 3) push buttons.

1) Pressure mats. Doors equipped with these are completely automatic. Because the pressure mat door maintains the signal, keeping the door open until the user is safely through, it is the most widely used fully automatic door opener. Automatic doors may either swing-in and/or swing-out depending upon the doorway configuration. If only one doorway is available, a combination entrance/exit swing-out approach will be necessary. This will require a long entrance approach to overcome the swing-out door (see figure 38a). If separate doors are available, individual entrance and exit swing-out doors could be set up utilizing shorter pressure mat approaches (see figure 38b). The swing-in entrance door, in this scheme, may also be required to open out for emergency egress and so must therefore be capable of swinging in both directions. In cases of double doors without mullions, a typical feature in historic buildings, a double swing-out door system similar to a single swing-out door may be achievable (see figure 38c). Even though the mullionless paired doors may individually meet the width standard, they must be operated together because of the safety hazard that would result if they opened in opposite directions.

2) Electric eye. These doors are also completely automatic but the signal operating the door remains activated only for a set period of time. Other operation details and characteristics of electric eye doors are similar to pressure mat doors.

3) Push button. Doors with this device are semi-automatic. The push buttons--one for entering and one for exiting--must be located either on the door or directly adjacent to it, and be clearly indicated. The door must open away from the user. Buttons can be located on separate doors for entrance and exit or on each side of the same door, if the door has a vision panel. As with separate swing-in, automatically operated

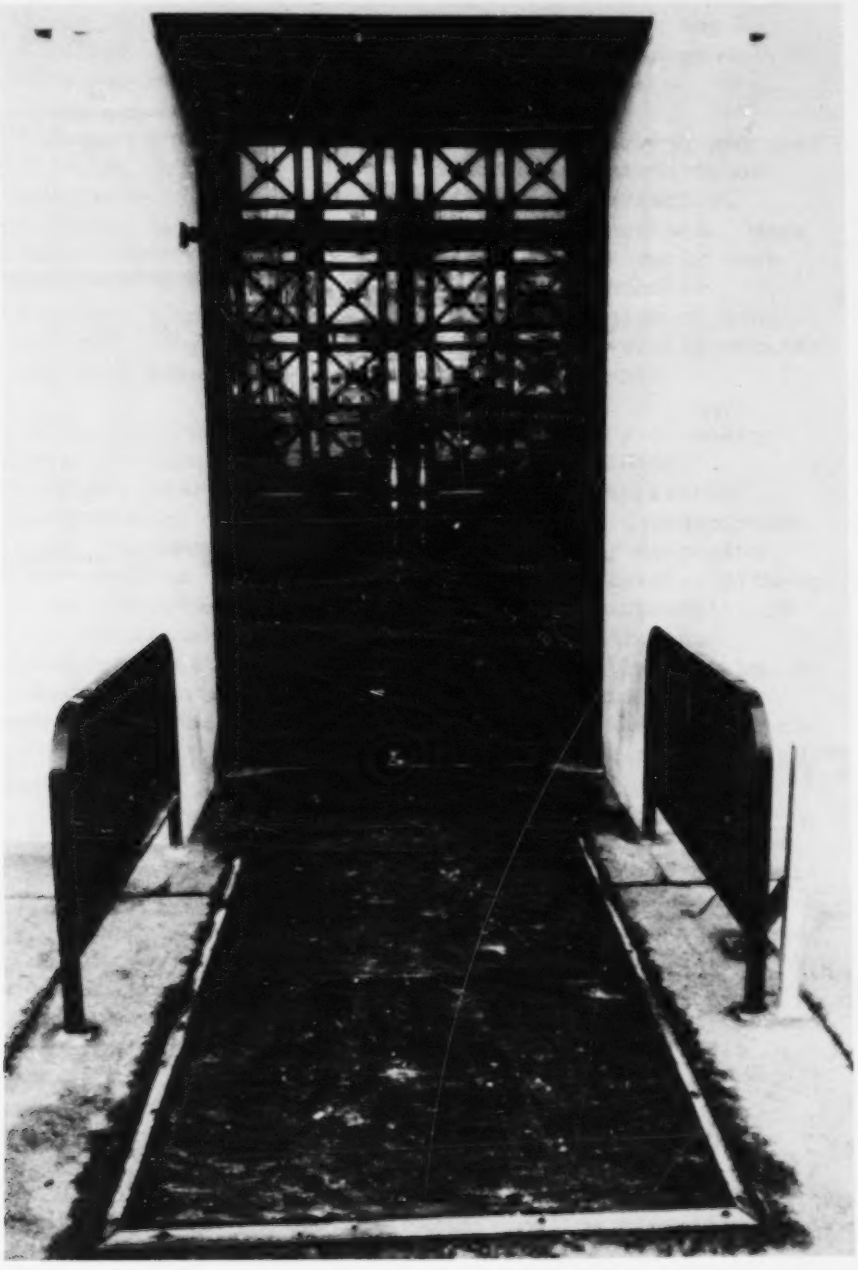

Figure 37: Power Operated Historic Doors. For doors, which due to weight, alignment, hardware, or wind pressure, are difficult to operate, the possibility of adding power doors with pressure mats, electric sensors, or push buttons should be considered. Photo: Charles Parrott.

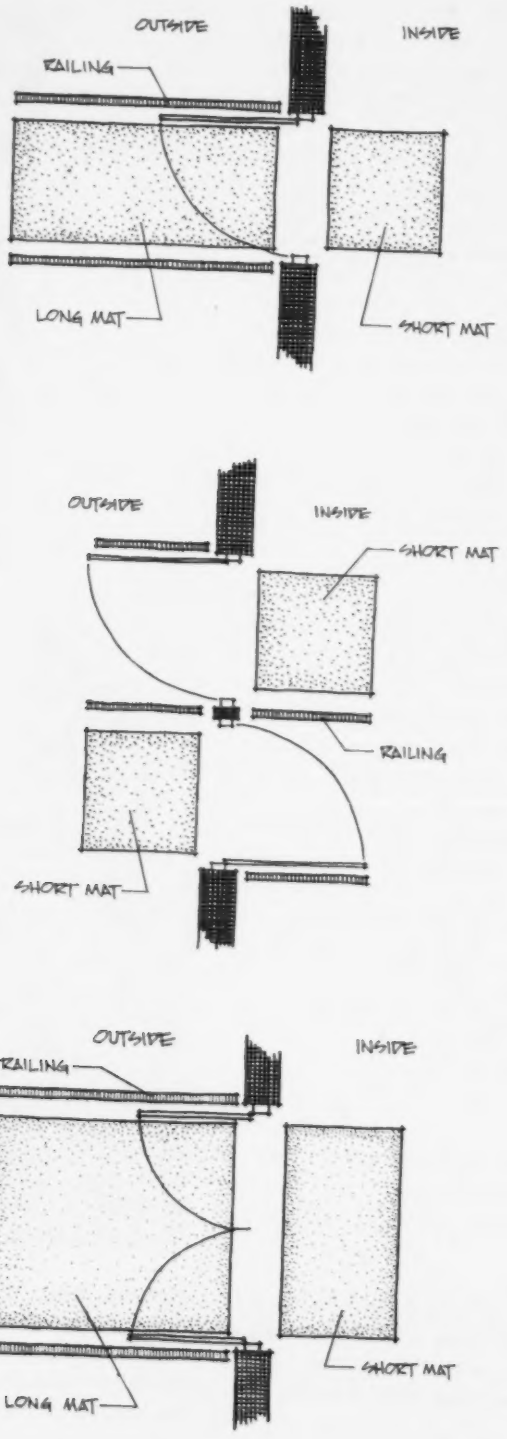

Figure 38: Pressure Mats. Pressure mats that actuate power doors generally provide the most dependable method of door operation. Since they operate on a weight contact basis, the doors remain open long enough to provide complete passage through the opening. Figure a is the typical configuration for a single outward swinging door, b is for entries with exit and entry doors, and c is for dual outward swinging doors. Illustration: Robert P. Meden.

doors, the swing-in push button entrance door may be required to be capable of opening out for emergency egress.

Because of the various requirements of latching and need to swing outward or in both directions, automatic or semi-automatic operation retrofitting of existing historic doors may require hardware modifications, door jamb modifications, and/or rehanging to properly meet accessibility and emergency egress requirements. However, with careful attention to the design of door systems, many historic doors can be successfully retained and made accessible without undue impairment.

Doors-New Openings: It is sometimes necessary to design entirely new doorways to make a historic building accessible. Such new doorways are most appropriately located at near or side elevations, or other inconspicuous points. New doorways can best be provided by deepening window openings that are located near grade level. Although adapting a window to a door will cause the destruction of some original material, this method of providing an accessible entry may be preferable to radically altering an original entrance. In any case, whether a window is deepened or a doorway added, any changes should respect the historic proportions, symmetry, and rhythm of the building elements.

While new doors and door framing in new locations may not need to match the exact detailing of the historic doors, it is important that the overall design of the new door and door opening be related to the historic doorways and other fenestration details. For example, the door plane setback, basic structural pattern (members defining transom, side panels, number of doors, and so forth) and width of the framing members should be in harmony with the historic character of the building.

Stairs: Standards for stairs are usually based on the specific requirements of a building code for general safety and emergency egress, not by specific accessibility provisions. However, a stair satisfying the prevailing code requirements will probably satisfy accessibility requirements. Unfortunately, many historic stairs do not meet normal standards for stairs which typically limit the rise of each step between 7 ½ and 8 inches. Historic stairs often have rises in excess of inches or more and potentially create dangerous nosing projections which may make them unsafe for those semi-ambulatory disabilities. On the exterior, objectional entrance steps can usually be avoided through use of a ramp or alternative entrance at, near, or below grade. On the interior, an accessible elevator eliminates the need for an accessible stair. In the absence of an accessible elevator, the semi-ambulatory persons should be directed to stairs that can offer them adequate safety. Less architecturally important stairs can be altered, but this is usually limited to adding tapered blocking beneath the tread nosings to reduce tripping, unless the stairway is completely rebuilt. If a new

Figure 39: Railings. Safety must be the primary concern, however, whenever possible an additional consideration must be to install hand railings which are compatible to the character and style of the building. Photo: Charles Parrott.

Figure 40: Railings. In some situations, it may be conceivable that the existing railing can be retained so that the integrity of the structure is maintained. Photo: Charles Parrott.

stairway is being provided for emergency egress, it should easily conform to accessibility requirements.

Railings: Protective railings are required on all ramps, stairs and entrance steps, lifts, and power doors. There is little reason why protective railings cannot be properly designed for accessibility and safety, and also be compatible with the buildings's historic character. Since stock railings may not be compatible, custom designs may be necessary (see figure 39). If there is no evidence or design precedence for earlier railings, or if the use of an historic design is unnecessary or inappropriate, the new railings should be designed in keeping with the rhythm, mass, materials, color, and style of the building (see figure 39). Whenever possible, historic railings that are serviceable should be retained (see figure 40). Depending upon the material or the way in which they are mounted, such railings might be slightly raised, lowered, or otherwise modified so that they will be in compliance with standards or codes. (26) As with interior stairs, altering railings will probably be unnecessary if there is also an elevator to provide alternative accessibility.

Restrooms: Fixtures in restrooms, including toilets and sinks, must be accessible to disabled persons. Although restrooms in historic buildings can be totally redesigned to meet accessibility requirements, considerations should be given to redesigning the restroom plan to make these fixtures accessible, while allowing the retention of existing historic materials such as marble or slate. New single occupancy unisex restrooms with the proper accessible features are also acceptable alternatives, unless their use is prohibited by the building or health regulations.

Miscellaneous Fixtures: Properly designed water fountains are also of critical importance for disabled persons. Such fountains should be designed to be unobtrusive, yet not difficult to locate, and be safe for all disabled-users.

Other fixtures such as fire alarm boxes, ash trays, heating equipment cabinets, and fire extinguishers should also be unobtrusively and safely located.

Fixtures that pose little hardship to the disabled, including light switches, electrical outlets, heating, ventilating, and air conditioning controls, and window hardware can generally be easily installed or altered for accessibility in historic buildings; however, such additions or modifications should, again, be designed to respect the building's existing materials and total architectural character.

Signage: Whether barrier-free access is achieved in a historic building through program accessibility or through architectural changes, proper directional and information signs for the disabled are essential. Use of the international symbol of accessibility is urged for use in conjunction with other standard symbols to identify

accessible building or program features. Signs should be coordinated with colors and other characteristics of the adjacent elements of the historic building so that the signs are easily seen, yet as unobtrusive as possible (see figure 41).

In a historic building, the manner in which the signs are mounted is, of course, a serious concern. Signs are usually not permanent and, when removed, can damage mounting surfaces. Therefore, care should be taken to insure that historic finish materials are not damaged when signs are mounted. This can often be achieved by designing and installing signs so that they are, in fact, not attached to any historic material that is difficult to repair. Finally, freestanding signs are usually appropriate on the buildings's exterior and may also be possible to use on the interior.

Accessibility signage should also be provided for blind people through the use of raised letters and symbols.[27] Care must be taken to place signs in standardized locations so that they can be easily found by the blind. For example, such signs should be placed on wall surfaces directly adjacent to the latch side of the doors (room numbers, office names), or on elevator door jambs (floor numbers).

Figure 41: Accessiblity Signage. Not only does the symbol imply access instructions to overcome a physical barrier, it also shows that thought and consideration have been given to provide equal opportunity for all in enjoying the programs and activities available within the historic building. Photo: Baird M. Smith.

Conclusion

The Ongoing Task

Underlying the development of this report are the dual goals of providing adequate access to the historic built environment and to the activities contained within it, while preserving our historically significant architectural resources. The potential for these two goals to conflict must continually be recognized and addressed to assure the successful accomplishment of both.

Therefore, in an effort to assist those people responsible for managing historic buildings, this report has provided pertinent information on the legal requirements for both building/program accessibility and historic resource protection; presented the process of planning for the implementation of an overall accessibility solution that will meet such diverse legal requirements; and described specific methods that can permit our nation's disabled citizens to experience and enjoy those activities housed in historic buildings as well as to experience and enjoy the historic buildings themselves.

Finally, it is essential to understand that while this publication provides specific suggestions for achieving building and program access, it is still a "preliminary report" and will be updated and revised, as necessary, to reflect both changes and improvements in accessibility methods, or changes in existing legal requirements.

Notes

1. American National Standards Institute. "Specifications for Making Buildings and Facilities Accessible to, and Usable by the Physically Handicapped; ANSI A117.1." (New York: American National Standards Institute, 1971).

2. American National Standards Institute. "Specifications for Making Buildings and Facilities Accessible to, and Usable by the Physically Handicapped; ANSI A117.1-1972." (New York: American National Standards Institute, 1979).

3. The adopting authority may be a subdivision of any level of government, whether it be a unit of federal, state, or local government.

4. P. L. 90-480, 42 USC 4151 et seq., dated August 12, 1968.

5. In addition to construction by federal agencies on their own buildings, these federal financial construction assistance programs tend to most commonly affect accessibility in historic buildings: Historic Preservation Grants-in-Aid program, U.S. Department of the Interior; Urban Development Action Grants and Community Development programs, U.S. Department of Housing; and Urban Development Assistance program, U.S. Department of Commerce.

6. Federal Property Management Regulations, Subpart 101-19.6-Accommodations for the Physically Handicapped, revised July 1, 1976.

7. P. L. 93-112, as amended by the Rehabilitation Act Amendments of 1974, P. L. 93-516, 29 USC 794.

8. P. L. 95-602, 29 USC 706.

9. Syracuse University, School of Architecture, Research Office. "Analysis of collected data on legislation and standards of 50 states and the District of Columbia

concerning laws requiring that buildings and facilities be accessible to handicapped persons." (Washington: The President's Committee on Employment of the Handicapped, 1975).

10. Ibid.

11. These proprietary model codes become law only when adopted, usually by reference, as part of a legally promulgated code. The three widely used national model building codes are: Building Officials and Code Administrators International, Inc. "Basic Building Code." Chicago: BOCA various and current edition(s); International Conference of Buildings Officials, "Uniform Building Code." Whittier, Ca, ICBO, various and current edition(s); Southern Building Code Congress International, Inc. "Standard Building Code" Birmingham, Alabama, SBCC various and current edition(s).

12. Each of the model codes now contains a historic building compliance modification provision. See Uniform Building Code section 104; Standard Building Code, section 103.4.1; and Basic Building Code, section 316.0. One of these provisions or another written for an individual code is now a part of many building codes. At least one code authority has developed a detailed historic preservation accessibility code. See "Alternative Handicapped Provisions;" part 8, "State Historic Building Code; Title 24 of the "California Administrative Code," reprinted herein as appendix II.

13. Each of the model codes now contain an alternative materials and methods of construction provision. See Uniform Building Code, Section 105; Standard Building Code, section 103.6, and Basic Building Code, section 109.4. One of these provisions or another written for an individual code is now a part of many building codes.

14. Building rehabilitation provisions in the building code of several cities and at least one state set out requirements applicable to rehabilitation, rather than new construction.

15. A certified historic property is one which has been duly listed on, or determined eligible for listing in, the National Register of Historic Places, either individually or part of a historic district, or has been duly classified by a state or local government authority as historic.

16. P. L. 89-665, 16 USC 470.

17. Compliance procedures entitled. "Procedures for the Protection of Historic and Cultural Properties" published in title 36, Code of Federal Regulations, part 800.

18. Advisory Council on Historic Preservation." Supplementary Guidance; Handicapped Access to Historic

Properties." see Federal Register, 45(no. 31): 9757-9758, February 13, 1980.

19. See section in Bibliography entitled "Accessibility Inventory Forms."

20. See Federal Register, 42(no. 183): 47658-47669.

21. The State Historic Preservation Officer (SHPO) is a state official appointed by each governor. For a current list of the SHPOs, see appendix.

22. For assistance in the selection of recommended project work treatments and approaches, see appendix, The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

23. Unless provided with at least one railing, the slope of any new earthen grade is usually specified to be no greater than 1:20 -- the same as for a walkway. Slopes between 1:20 and the 1:12 maximum usually permitted for a ramp are required to contain at least one railing.

24. The minimum inside cab dimensions usually allowed for unassisted use of an elevator in which a wheelchair can be turned around is 51 inches in depth and 68 inches in width with a 36 inches single slide door. For unassisted use of an elevator in which a wheelchair cannot be turned around, the minimum inside cab dimensions are 51 inches in depth and 54 inches in width with a 36 inches single slide door. See "Suggested Minimum Passenger Elevator Requirements for the Handicapped," (New York: National Elevator Industry, Inc.) However, this minimum width of 54 inches is determined by the minimum dimension necessary to allow a self contained single slide door. Thus, if permitted, use of a hinged door on the cab could allow a smaller elevator with an inside width dependent only on the accommodations of a door of proper width. Minimizing the cab dimensions will often be an important consideration in successfully retrofitting an elevator in a historic building. Without special arrangements being made, most building regulations will require an elevator to be 68 inches wide to allow wheelchair users to turn around.

25. A narrow wheelchair is 25 inches wide, where as standard wheelchairs are 29 inches wide.

26. Some building regulations may require railings to be one specific height, such as 32 inches, while others may allow an acceptable range, such as 30 inches to 34 inches. Other requirements involve such dimensions as railing projection beyond the end of a ramp or stair, and the size and configuration of the gripping rail itself.

27. Braille printing is not recommended for use as a public informational system for the blind since only about 10 percent of blind people are trained in its use.

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Selected Bibliography

A Guide to Designing Accessible Outdoor Recreation Facilities. Ann Arbor: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1980.

Access National Parks: A Guide for Handicapped Visitors. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1978.

Access to the Environment. Washington, D.C.: U.S. Department of Housing and Urban Development, 1978.

Accessibility Assistance: A Directory of Consultants on Environments for Handicapped People. Washington, D.C.: National Center for A Barrier Free Environment, 1978.

Accessibility: The Law and the Reality. Des Moines, Iowa: Iowa Chapter, American Institute of Architects, 1974.

Accommodation of Handicapped Visitors at Historic Sites, Volume 1 Guide and Volume 2 Technical Manual. Washington, D.C.: U.S. Department of Interior, National Park Service, 1979.

Aiello, Barbara, ed. Places and Spaces: Facilities Planning for Handicapped Children. Reston, Va.: Council for Exceptional Children, 1975.

ANSI A117.1 (1980), Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People. New York: American National Standards Institute, Inc., 1980.

Architectural Barriers Legislation for the Aiding of the Handicapped. Rochester, N.Y.: General Code Publishers Corp., 1967.

Baker, Madeline; Fischetti, Michael A.; Williams, Lawrence A.; and Young, Eddie M. State and Local Efforts to Eliminate Architectural Barriers to the Handicapped (Washington, D.C.: U.S. Department of Health, Education and Welfare, 1967.

Barrier Free Site Design. Washington, D.C.: U.S. Department of Housing and Urban Development, 1975.

BOCA Basic Building Code, 1975. Danville, Ill.: Building Officials and Code Administrators International, Inc., 1975.

Bullock, Orin M. Jr. The Restoration Manual: An Illustrated Guide to the Preservation and Restoration of Old Buildings. Norwalk, Conn.: Silvermine Publishers, 1966.

Callow, Kathy. "Museums and the Disabled." Museum Journal (September, 1974).

Chambers, J. Henry, AIA Cyclical Maintenance for Historic Buildings Washington, D.C.: U.S. Department of the Interior, National Park Service, 1976.

Coon, N., The Place of the Museum in the Education of the Blind. New York: American Foundation for the Blind, 1953.

Coons, Maggie, and Milner, Margaret. Creating an Accessible Campus Washington, D.C.: Assoication of Physical Plant Administrators of Universities and Colleges, 1978.

Day on Wheels. Washington, D.C.: General Services Administration, 1975.

Design Criteria: New Public Building Accessibility Washington, D.C.: General Services Administration, 1977.

Dreyfuss, Henry. The Measure of Man: Human Factors in Design. New York: Whitney Library of Design, 1967.

Duncan, John, et. al. "Environmental Modifications for the Visually Impaired." Journal of Visual Impairment and Blindness, 71 (No. 10, Dec. 10, 1977), pp. 442-455.

Fay, Frederick, and Minch, Janet. A Report on the National Hearings on Recreation for Handicapped People. Washington, D.C.: Architectural and Transportation Barriers Compliance Board, 1976.

Fellman, Meri. "Programs for Deaf Visitors at the National Air and Space Museum: Research Study" Washington, D.C.: National Air and Space Museum, July 1977.

Gelwicks, L.E. "Design for Persons with Limited Mobility." AIA Journal, (Nov. 1964), p.2

Goldsmith, Selwyn Design for the Disabled. New York: McGraw Hill, 1967. Goodwin, Virginia, and Uloth, Ray. Outward Bound and the Physically Disabled Wayzata, Minn.: Outward Bound School, 1979.

Groom, J. and Harkness, S. Building Without Barriers for the Disabled. New York: Whitney Library of Design., 1976.

Harrison, M. "Handicapped Children and Museums." Museum Journal (August, 1959).

Harvey, John H. The Conservation of Buildings. London: J. Baker, 1972. Henning, D. A Checklist for Building Use by the Handicapped. Ottawa, Canada: National Research Council, No. 10431, 1968.

Henriksen, Harry C. "Your Museum: A Resource for the Blind." Museum News (October, 1971).

The Impact of Accessibility and Historic Preservation Laws, Regulations and Policies on NPS Historic Sites: Analysis and Recommendations Washington, D.C.: U.S. Department of the Interior, National Park Service, 1978.

Insall, Donald W. The Care of Old Buildings Today: A Practical Guide. London: The Architectural Press, 1972.

Jones, Michael, A. Accessibility Standards Illustrated Springfield Ill.: Capital Development Board, 1978.

Jorgensen, Jay. Landscape Design for the Disabled. Washington, D.C.: American Society of Landscape Architects Foundation, 1967.

Kay, Stephen R. Community Operated and Funded Recreation Programs for the Handicapped Chicago, Ill.: National Suburban Special Recreation Association, 1976.

Kenney, Alice P. Access to the Past. Nashville, Tenn.: American Association for State and Local History, 1980.

Kenney, Alice P. "Open Door for the Handicapped." Historic Preservation (July-Sept. 1978), pp. 12-17.

Kenney, Alice P., "A Test of Barrier-Free Design." Museum News (Jan.-Feb. 1977).

Kinsey, W.F.A. "A Museum Exhibit for the Blind" The Seer (December, 1960).

Kliment, Stephen A., Into the Mainstream: A Syllabus for a Barrier Free Environment. Washington, D.C.: American Institute of Architects, 1975.

Lassen, Peter. Architectural Barriers Bibliography Washington, D.C.: Paralyzed Veterans of America, 1973.

Lisenco, Yasha. Art Not By Eye. New York: American Foundation for the Blind, 1971.

Loversidge, Robert D., Jr., ed. Access For All: An Illustrated Handbook of Barrier Free Design for Ohio Columbus: Governor's Committee on Employment of the Handicapped, 1979.

Mace, Ronald L. Accessibility Modifications. Raleigh, N.C.: North Carolina Department of Insurance, 1976.

Mace, Ronald L., and Laslett, Betsy An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code. Raleigh, N.C.: North Carolina Department of Insurance, 1977.

Making Facilities Accessible to the Physically Handicapped. Albany, N.Y.: State University Construction Fund, 1967, 1974.

McKee, Harley J. Recording Historic Buildings. Washington, D.C.: National Park Service, 1970.

Miller, Hugh C. "Accommodations for the Handicapped at Historic Sites and Structures." Cultural Resources Management Bulletin 2 (no. 1, March 1979): 1-8.

Molloy, Larry. Arts and the Handicapped: An Issue of Access New York: Educational Facilities Labroatories, 1975.

Molloy, Larry. "The Case for Accessibility." Museum News (Jan.-Feb. 1977).

Moore, George. "Displays for the Sightless." Museum Journal (March, 1969).

Nature Trails, Braille Trails, Footpaths, Fragrance Gardens; Touch Museums for the Blind: Policy Statement. New York: American Foundation for the Blind, 1973.

Nierenberg, Linda, and Berthold, Michael. Modifications of New York State Parks for Disabled Individuals. New York: Human Resources Center, 1977.

Occupational Safety and Health Standards: Safety and Health Regulations for Construction Washington, D.C.: U.S. Department of Labor, 1970.

Olson, Sharon C., and Meredith, Dian K. Wheelchair Interiors. Chicago, Ill.: National Easter Seal Society for Crippled Children and Adults, 1973.

429 0 - 80 - 6 : QL 3

Owen, Mary Jane. Developing Museum Experiences for the Handicapped: A Gathering of Information Related to the Question of Accommodation and Accessibility Within Museums. Oakland, Calif.: Western Association of Museums, 1978.

Preservation and Conservation: Principles and Practices. Washington, D.C.: Preservation Press, 1976.

President's Committee on Employment of the Handicapped. People are Asking about Displaying the Symbol of Access Washington, D.C.: U.S. Government Printing Office. 1971.

Ramsey, Charles G., and Sleeper, Harold R. Architectural Graphic Standards. New York: John Wiley & Sons, 1970.

Resource Guide to Literature on Barrier Free Design. Washington, D.C.: Architectural and Transportation Barriers Compliance Board, 1977.

Ries, Michael L. Design Standards to Accommodate People With Physical Disabilities in Park and Open Space Planning Madison, Wis.: University of Wisconsin, 1973.

Rogers, T.S. "Why Twenty Million People Fear Stairs." AIA Journal 43 (June 1969): 67-68.

Schweikert, Harry A. Wheelchair Bathrooms. Washington, D.C.: Paralyzed Veterans of America, 1971.

Secretary of the Interior's Standards for Historic Preservation Projects. Washington, D.C.: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1979

Section 4.12: Design of Barrier-Free Facilities: Technical Handbook for Facilities Engineering and Construction Manual. Washington, D.C.: U.S. Department of Health, Education and Welfare, 1974.

Singh, Silas P. Mainstreaming Handicapped Individuals: Parks and Recreation Design Standards Manual. (Springfield, Ill.: Illinois Department of Conservation, 1978.

Smith, Patricia Scherf. "Against Segregating the Blind." Museum News (Jan.-Feb. 1977.

Snider, Harold. "The Inviting Air of an Accessible Space." Museum News (Jan.-Feb. 1977).

"Museums and the Blind: A Look Ahead." The Braille Monitor (Sep. 1976).

Steinfield, Edward Access: The State of the Art Vols 1 and 2 Washington, D.C.: U.S. Department of Housing and Urban Development, 1975.

Tice, Phyllis, and Shaw, Julius. Barrier-Free Design: Accessibility for the Handicapped New York: City University of New York, 1974.

Toll, Dave. "Should Museums Serve the Visually Handicapped?" New Outlook for the Blind 69 (No. 10, Dec. 1975).

Trends for the Handicapped. Washington, D.C.: U.S. Department of the Interior, 1974.

Uloth, Ray. Outward Bound and Hearing Impaired Youth Wayzata, Minn.: Minnesota Outward Bound School, 1979.

Wilden, Freeman Interpreting Our Heritage. Chapel Hill, N.C.: University of North Carolina Press, 1959.

Wolfensberger, W. The Principle of Normalization in Human Services. Toronto: National Institute on Mental Retardation, 1972.

Yuker, Harold E.; Cohn, A.; and Feldman, Martin A. The Development and Effects of an Inexpensive Elevator for Eliminating Architectural Barriers in Public Buildings Hempstead, N.Y.: Hofstra University, 1966.

Accessibility Inventory Forms

Coons, Maggie and Milner Margaret. Creating an Accessible Campus, ABT Associates, Inc., Cambridge, Mass. "Higher Education Facilities Project," pp 43-45, and State University Construction Fund, State of New York, "Facility Architectural Accessibility Report," pp. 46-55. Washington, D.C.: Association of Physical Plant Administrators, 1978.

Harold Russell Associates, Waltham, Mass. "Surveying the Site," pp. 13-14; and "Detailed Survey Checklist," pp. 15-32 Accommodation of Handicapped Visitors at Historic Sites, Volume 2, Technical Manual. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1979.

Higher Education Facilities Services Incorporated, Raleigh, N.C. "Site Visit Survey Form." Campus Accessibility Survey Program Guidebook. Washington, D.C.: U.S. Department of Health, Education and Welfare, National Center of Educational Statistics, 1979.

Kliment, Stephen L. Into the Mainstream; A Syllabus for a Barrier Free Environment. Iowa Chapter, American Institute of Architects "Suggested Accessibility Compliance Checklist," pp 38-44, and National Easter Seal Society, "Building Survey to Develop Guides for the Handicapped," pp 35-376 Washington, D.C.: American Institute of Architects and US Department of Health, Education and Welfare, Rehabilitation Services Administration, 1975.

Mace, Ronald L. "Survey of Existing Buildings." Accessibility Modifications Guidelines for Modifications to Existing Buildings for Accessibility to the Handicapped. Raleigh, N.C.: North Carolina Department of Insurance, Special Office for the Handicapped, 1976, pp v-xii.

Appendix A: Section 504 "Proposed Rules"

The Department of the Interior (DOI) published "proposed rules" to implement Section 504 of the Rehabilitation Act of 1973 in the Federal Register on Tuesday, April 8, 1980. It included sections such as definitions, employment, program accessibility, new construction, education and historic preservation. At the time of the printing of this publication, those "proposed rules" were being reviewed by the Department of Health and Human Services (HHS) formerly the Department of Health, Education and Welfare, and it was anticipated that they would be published as "final rules" in the Fall of 1980.

The following material is the historic preservation section (see 17.260) from the "proposed rules" in a slightly revised form which will be included in DOI's "final rules."

§ 17.260 Historic Preservation Programs

(a) In the case of historic properties, program accessibility shall mean that, when reviewed in their entirety, programs are accessible to and usable by handicapped persons. Historic properties are those architecturally, historically or culturally significant properties that are listed or are eligible for listing in the National Register of Historic Places individually, or such properties designated as historic under a statute of the appropriate State or local governmental body. Recipients of Federal assistance are required to make necessary alterations to historic properties unless they would cause substantial impairment of significant historic features. A substantial impairment occurs when a permanent alteration is made which eliminates the structure or site characteristics or features that resulted in National Register eligibility of the structure or site, including integrity of finish materials, design quality or spatial character. Substantial impairment to historic properties can be avoided when the proposed work is in conformance with the Secretary of the Interior's "Standards for Historic Preservation Projects" (36 CFR 1207 published in the Federal Register December 7, 1978). In the case of historic properties, the following factors should be considered in making such properties accessible:

(1) Scale of Structure.

(2) Public versus private use.

(3) Type of program and relationship to its historic setting.

(4) Cost of necessary modification and analysis of benefits.

(b) Where the structure is Federally owned or where Federal funds may be used for alterations, the comments of the Advisory Council shall be obtained pursuant to 36 CFR Part 800 prior to undertaking such work.

(c) Where access cannot be achieved without causing a substantial impairment of significant historic features, the recipient may seek a modification or waiver of access standards. In deciding whether to grant such a waiver, the head of the agency shall consult with the Advisory Council on Historic Preservation Pursuant to 36 CFR Part 800.

Appendix B: List of State Historic Preservation Officers

State Historic Preservation Officers

Alabama: Director, Alabama Department of Archives and History, Chairman, Alabama Historical Commission, Archives and History Building, Montgomery, AL 36104 **Alaska:** Chief of History and Archeology, Division of Parks, Department of Natural Resources, 619 Warehouse Avenue, Suite 210, Anchorage, AK 99501 **American Samoa:** Territorial Historic Preservation Officer, Department of Public Works, Government of American Samoa, Pago Pago, American Samoa 96799 **Arizona:** Chief, Natural and Cultural Resource Conservation Section Arizona State Parks, 1688 West Adams, Phoenix, AZ 85007 **Arkansas:** Director, Arkansas Historic Preservation Program, Suite 500, Continental Building, Markham and Main Streets, Little Rock, AR 72201 **California:** Office of Historic Preservation, California Department of Parks & Recreation, P.O. Box 2390, Sacramento, CA 95811 **Colorado:** State Historic Preservation Officer, Colorado Heritage Society, 1300 Broadway, Denver, CO 80203 **Connecticut:** Director, Connecticut Historical Commission, 59 South Prospect Street, Hartford, CN 06106 **Delaware:** Director, Division of Historical and Cultural Affairs, Hall of Records, Dover, DE 19901 **District of Columbia:** Director, Department of Housing and Community Development, 1325 G Street, NW., Washington, D.C. 20005 **Florida:** Director, Division of Archives, History and Records Management, Department of State, 401 East Gaines Street, Tallahassee, FL 32304 **Georgia:** Chief, Historic Preservation Section, Department of Natural Resources, 270 Washington Street, SW., Room 703–C, Atlanta, GA 30334 **Guam:** Director of Parks and Recreation, Government of Guam, P.O. Box 682, Agana, Guam 96910 **Hawaii:** Department of Land and Natural Resources, P.O. Box 621, Honolulu, HI 96809 **Idaho:** Historic Preservation Coordinator, Idaho Historical Society, 610 North Julia Davis Drive, Boise, ID 83706 **Illinois:** Director, Department of Conservation, 602 State Office Building, 400 South Spring Street, Springfield, IL 62706 **Indiana:** Director, Department of Natural Resources, 608 State Office Building, Indianapolis, IN 46204 **Iowa:** Director, Iowa State Historical Dept., Division of Historic Preservation, 26 East Market Street, Iowa City, IA 52240 **Kansas:** Executive Director, Kansas State Historical Society, 120 West 10th Street, Topeka, KS 66612 **Kentucky:** Director, Kentucky Heritage Commission, 104 Bridge Street, Frankfort, KY 40601 **Louisiana:** Office of Program Development, P.O. Box 44247, Baton Rouge, LA 70804 **Maine:** Director, Maine Historic Preservation Commission, 31 Western Avenue, Augusta, ME 04330 **Maryland:** John Shaw House, 21 State Circle, Annapolis, MD 21401 **Massachusetts:** Executive Director, Massachusetts Historical Commission, 294 Washington Street, Boston, MA 02108 **Michigan:** Director, Michigan History Division, Department of State, Lansing, MI 48918 **Minnesota:** Director, Minnesota Historical Society, 690 Cedar Street, St. Paul, MN 55101 **Mississippi:** Director, State of Mississippi, Department of Archives and History, P.O. Box 571, Jackson, MS 39205 **Missouri:** Director, State Department of Natural Resources, P.O. Box 176, Jefferson City, MO

65102 **Montana:** Director, Montana Historical Society, 225 North Roberts Street, Veterans Memorial Building, Helena, MT 59601 **Nebraska:** The Nebraska State Historical Society, 1500 R Street, Lincoln, NE 68508 **Nevada:** Division of Historic Preservation and Archaeology, Capitol Complex, Carson City, NV 89710 **New Hampshire:** Commissioner, Department of Resources and Economic Development, P.O. Box 856, Concord, NH 03301 **New Jersey:** Commissioner, Department of Environmental Protection, P.O. Box 1390, Trenton, NJ 08625 **New Mexico:** New Mexico Historic Preservation Program, Educational Finance and Cultural Affairs Department, c/o New Mexico State Library, P.O. Box 1629, Santa Fe, NM 87503 **New York:** Commissioner, Parks and Recreation, Agency Buildings #1, Empire State Plaza, Albany, NY 12238 **North Carolina:** Director, Division of Archives and History, Department of Cultural Resources, 109 East Jones Street, Raleigh, NC 27611 **North Dakota:** Superintendent, State Historical Society of North Dakota, Liberty Memorial Building, Bismark, ND 58501 **Northern Mariana Islands:** c/o Department of Community and Cultural Affairs, Commonwealth of the Northern Mariana Islands, Saipan, Mariana Islands 36950 **Ohio:** Chief, Division of Historic Preservation, The Ohio Historical Society, Interstate 71 at 17th Avenue, Columbus, OH 43211 **Oklahoma:** Oklahoma Historical Society, Historical Building, Okalahoma City, OK 73105 **Oregon:** State Parks Superintendent, 525 Trade Street, SE., Salem, OR 97310 **Pennsylvania:** Executive Director, Pennsylvania Historical and Museum Commission, P.O. Box 1026, Harrisburg, PA 17120 **Commonwealth of Puerto Rico:** Institute of Puerto Rico Culture, Apartado 4184, San Juan, PR 00905 **Rhode Island:** Director, Rhode Island Department of Community Affairs, 150 Washington Street, Providence, RI 02903 **South Carolina:** Director, State Archives Department, 1430 Senate Street, Columbia, SC 29211 **South Dakota:** Historical Preservation Center, University of South Dakota, Alumni House, Vermillion, SD 57069 **Tennessee:** Executive Director, Tennessee Historical Commission, 4721 Trousdale Drive, Nashville, TN 37220 **Texas:** Executive Director, Texas State Historical Commission, P.O. Box 12276, Capitol Station, Austin, TX 78711 **Trust Territory of the Pacific Islands:** Land Resources Branch, Department of Resources & Development, TTPI, Saipan, Mariana Islands 96950 **Utah:** Director, Utah State Historical Society, 307 West 200 South, Suite 1000, Salt Lake City, UT 84101 **Vermont:** Secretary, Agency of Development and Community Affairs, Pavilion Office Building, Montpelier, VT 05602 **Virginia:** Virginia Historic Landmarks Commission, 221 Governor Street, Richmond, VA 23219 **Virgin Islands:** Planning Director, Virgin Islands Planning Board, Charlotte Amalie, St. Thomas, VI 00801 **Washington:** State Historic Preservation Officer, 111 West 21st Avenue, KL-11, Olympia, WA 98504 **West Virginia:** Historic Preservation Unit, Department of Culture and History, State Capitol Complex, Charleston, WV 25305 **Wisconsin:** Director, State Historical Society of Wisconsin, 816 State Street, Madison, WI 53706 **Wyoming:** Director, Wyoming Recreation Commission, 604 East 25th Street, Box 309, Cheyenne, WY 82001 **National Trust for Historic Preservation:** President, National Trust for Historic Preservation, 1785 Massachusetts Avenue, NW., Washington, D.C. 20036

1980

Appendix C: The Secretary of the Interior's Standards for Rehabilitation

"Rehabilitation means the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."

The following "Standards for Rehabilitation" shall be used by the Secretary of the Interior when determining if a rehabilitation project qualifies as "certified rehabilitation" pursuant to the Tax Reform Act of 1976 and the Revenue Act of 1978. These standards are a section of the Secretary's "Standards for Historic Preservation Projects" and appear in Title 36 of the Code of Federal Regulations, Part 1208 (formerly 36 CFR Part 67).

1. Every reasonable effort shall be made to provide a compatible use for a property which requires minimal alteration of the building, structure, or site and its environment, or to use a property for its originally intended purpose.

2. The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.

3. All buildings, structures, and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.

4. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.

5. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site shall be treated with sensitivity.

6. Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.

7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.

8. Every reasonable effort shall be made to protect and preserve archeological resources affected by, or adjacent to any project.

9. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with the size, scale, color, material, and character of the property, neighborhood or environment.

10. Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

GUIDELINES FOR APPLYING THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

The following guidelines are designed to help individual property owners formulate plans for the rehabilitation, preservation, and continued use of historic buildings consistent with the intent of the Secretary of the Interior's "Standards for Rehabilitation." The guidelines pertain to buildings of all occupancy and construction types, sizes, and materials. They apply to permanent and temporary construction on the exterior and interior of historic buildings as well as new attached or adjacent construction.

Techniques, treatments, and methods consistent with the Secretary's "Standards for Rehabilitation" are listed in the "recommended" column on the left. Not all recommendations listed under a treatment will apply to each project proposal. Rehabilitation approaches, materials, and methods which may adversely affect a building's architectural and historic qualities are listed in the "not recommended" column on the right. Every effort will be made to update and expand the guidelines as additional techniques and treatments become known.

Specific information on rehabilitation and preservation technology may be obtained by writing to the Technical Preservation Services Division, Heritage Conservation and Recreation Service, U.S. Department of the Interior, Washington, D.C. 20243, or the appropriate State Historic Preservation Officer. Advice should also be sought from qualified professionals, including architects, architectural historians, and archeologists skilled in the preservation, restoration, and rehabilitation of old buildings.

THE ENVIRONMENT

Recommended	*Not Recommended*
Retaining distinctive features such as the size, scale, mass, color, and materials of buildings, including roofs, porches, and stairways that give a neighborhood its distinguishing character.	Introducing new construction into neighborhoods that is incompatible with the character of the district because of size, scale, color, and materials.
Retaining landscape features such as parks, gardens, street lights, signs, benches, walkways, streets, alleys and building setbacks that have traditionally linked buildings to their environment.	Destroying the relationship of buildings and their environment by widening existing streets, changing paving material, or by introducing inappropriately located new streets and parking lots that are incompatible with the character of the neighborhood.
Using new plant materials, fencing, walkways, street lights, signs, and benches that are compatible with the character of the neighborhood in size, scale, material and color.	Introducing signs, street lighting, benches, new plant materials, fencing, walkways and paving materials that are out of scale or are inappropriate to the neighborhood.

BUILDING SITE

Recommended	*Not Recommended*
Identifying plants, trees, fencing, walkways, outbuildings, and other elements that might be an important part of the property's history and development.	
Retaining plants, trees, fencing, walkways, street lights, signs, and benches that reflect the property's history and development.	Making changes to the appearance of the site by removing old plants, trees, fencing, walkways, outbuildings, and other elements before evaluating their importance in the property's history and development.
Basing decisions for new site work on actual knowledge of the past appearance of the property found in photographs, drawings, newspapers, and tax records. If changes are made they should be carefully evaluated in light of the past appearance of the site.	Leaving plant materials and trees in close proximity to the building that may be causing deterioration of the historic fabric.
Providing proper site and roof drainage to assure that water does not splash against building or foundation walls, nor drain toward the building.	

Archeological features

Recommended	*Not Recommended*
Leaving known archeological resources intact.	Installing inderground utilities, pavements, and other modern features that disturb archeological resources.
Minimizing disturbance of terrain around the structure, thus reducing the possibility of destroying unknown archeological resources.	Introducing heavy machinery or equipment into areas where their presence may disturb archeological resources.
Arranging for an archeological survey of all terrain that must be disturbed during the rehabilitation program. The survey should be conducted by a professional archeologist.	

BUILDING: STRUCTURAL SYSTEMS

Recommended	*Not Recommended*
Recognizing the special problems inherent in the structural systems of historic buildings, especially where there are visible signs of cracking, deflection, or failure.	Disturbing existing foundations with new excavations that undermine the structural stability of the building.
Undertaking stabilization and repair of weakened structural members and systems.	Leaving known structural problems untreated that will cause continuing deterioration and will shorten the life of the structure.
Replacing historically important structural members only when necessary. Supplementing existing structural systems when damaged or inadequate.	

BUILDING: EXTERIOR FEATURES

Masonry: Adobe, brick, stone, terra cotta, concrete, stucco and mortar

Recommended *	*Not Recommended*
Retaining original masonry and mortar, whenever possible, without the application of any surface treatment.	Applying waterproof or water repellent coatings or surface consolidation treatments unless required to solve a specific technical problem that has been studied and identified. Coatings are frequently unnecessary, expensive, and can accelerate deterioration of the masonry.

Repointing only those mortar joints where there is evidence of moisture problems or when sufficient mortar is missing to allow water to stand in the mortar joint.	Repointing mortar joints that do not need repointing. Using electric saws and hammers to remove mortar can seriously damage the adjacent brick.
Duplicating old mortar in composition, color, and texture.	Repointing with mortar of high Portland cement content can often create a bond that is stronger than the building material. This can cause deterioration as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.
Duplicating old mortar in joint size, method of application, and joint profile.	Repointing with mortar joints of a differing size or joint profile, texture or color.
Repairing stucco with a stucco mixture that duplicates the original as closely as possible in appearance and texture.	
Cleaning masonry only when necessary to halt deterioration or to remove graffiti and stains and always with the gentlest method possible, such as low pressure water and soft natural bristle brushes.	Sandblasting, including dry and wet grit and other abrasives, brick or stone surfaces; this method of cleaning erodes the surface of the material and accelerates deterioration. Using chemical cleaning products that would have an adverse chemical reaction with the masonry materials, i.e., acid on limestone or marble.
Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible.	Applying new material which is inappropriate or was unavailable when the building was constructed, such as artificial brick siding, artificial cast stone or brick veneer.
Replacing missing significant architectural features, such as cornices, brackets, railings, and shutters.	Removing architectural features such as cornices, brackets, railings, shutters, window architraves, and doorway pediments.
Retaining the original or early color and texture of masonry surfaces, including early signage wherever possible. Brick or stone surfaces may have been painted or whitewashed for practical and aesthetic reasons.	Removing paint from masonry surfaces indiscriminately. This may subject the building to damage and change its appearance.

* For more information consult Preservation Briefs: 1: "The Cleaning and Waterproof Coating of Masonry Buildings" and Preservation Briefs: 2: "Repointing Mortar Joints in Historic Brick Buildings" (Washington, D.C.: Heritage Conservation and Recreation Service, 1975 and 1976). Both are available from the Government Printing Office or State Historic Preservation Officers.

Wood: Clapboard, weatherboard, shingles and other wooden siding

Recommended	*Not Recommended*
Retaining and preserving significant architectural features, wherever possible.	Removing architectural features such as siding, cornices, brackets, window architraves, and doorway pediments. These are, in most cases, an essential part of a building's character and appearance that illustrate the continuity of growth and change.
Repairing or replacing, where necessary, deteriorated material that duplicates in size, shape, and texture the old as closely as possible.	Resurfacing frame buildings with new material that is inappropriate or was unavailable when the building was constructed such as artificial stone, brick veneer, asbestos or asphalt shingles, and plastic or aluminum siding. Such material can also contribute to the deterioration of the structure from moisture and insects.

Architectural Metals: Cast iron, steel, pressed tin, aluminum and zinc

Recommended	*Not Recommended*
Retaining original material, whenever possible.	Removing architectural features that are an essential part of a building's character and appearance, illustrating the continuity of growth and change.
Cleaning when necessary with the appropriate method. Metals should be cleaned by methods that do not abrade the surface.	Exposing metals which were intended to be protected from the environment. Do not use cleaning methods which alter the color, texture, and tone of the metal.

Roofs and Roofing

Recommended	*Not Recommended*
Preserving the original roof shape.	Changing the essential character of the roof by adding inappropriate features such as dormer windows, vents, or skylights.
Retaining the original roofing material, whenever possible.	Applying new roofing material that is inappropriate to the style and period of the building and neighborhood.
Providing adequate roof drainage and insuring that the roofing materials provide a weathertight covering for the structure.	

Replacing deteriorated roof coverings with new material that matches the old in composition, size, shape, color, and texture.	Replacing deteriorated roof coverings with new materials that differ to such an extent from the old in composition, size, shape, color, and texture that the appearance of the building is altered.
Preserving or replacing where necessary, all architectural features that give the roof its essential character, such as dormer windows, cupolas, cornices, brackets, chimneys, cresting, and weather vanes.	Stripping the roof of architectural features important to its character.
Windows and Doors	
Recommended *	*Not Recommended*
Retaining and repairing window and door openings, frames, sash, glass, doors, lintels, sills, pediments, architraves, hardware, awnings and shutters where they contribute to the architectural and historic character of the building.	Introducing or changing the location or size of windows, doors, and other openings that alter the architectural and historic character of the building.
	Replacing window and door features on significant facades with historically and architecturally incompatible materials such as anodized aluminum, mirrored or tinted glass.
	Removing window and door features that can be repaired where such features contribute to the historic and architectural character of the building.
	Changing the size or arrangement of window panes, muntins, and rails where they contribute to the architectural and historic character of the building.
Improving the thermal performance of existing windows and doors through adding or replacing weather-stripping and adding storm windows and doors which are compatible with the character of the building and which do not damage window or door frames.	Installing on significant facades shutters, screens, blinds, security grills, and awnings which are historically inappropriate and which detract from the character of the building.
	Installing new exterior storm windows and doors which are inappropriate in size or color, which are inoperable, or which require removal of original windows and doors.

*For more information consult Preservation Briefs: 3: "Conserving Energy in Historic Buildings" (Washington, D.C. Heritage Conservation and Recreation Service, 1978). It is available from the Government Printing Office or State Historic Preservation Officers.

Windows and Doors

Recommended	*Not Recommended*
	Installing interior storm windows that allow moisture to accumulate and damage the window.
Replacing missing or irreparable windows on significant facades with new windows that match the original in material, size, general muntin and mullion proportion and configuration, and reflective qualities of the glass.	Replacing sash which contribute to the character of a building with those that are incompatible in size, configuration, and reflective qualities or which alter the setback relationship between window and wall.
	Installing heating/air conditioning units in the window frames when the sash and frames may be damaged. Window installations should be considered only when all other viable heating/cooling systems would result in significant damage to historic materials.

Storefronts

Recommended	*Not Recommended*
Retaining and repairing existing storefronts including windows, sash, doors, transoms, signage, and decorative features where such features contribute to the architectural and historic character of the building.	
Where original or early storefronts no longer exist or are too deteriorated to save, retaining the commercial character of the building through 1) contemporary design which is compatible with the scale, design, materials, color, and texture of the historic buildings; or 2) an accurate restoration of the storefront based on historical research and physical evidence.	Introducing a storefront or new design element on the ground floor, such as an arcade, which alters the architectural and historic character of the building and its relationship with the street or its setting or which causes destruction of significant historic fabric.
	Using materials which detract from the historic or architectural character of the building, such as mirrored glass.
	Altering the entrance through a significant storefront.

Entrances, porches, and steps

Recommended	*Not Recommended*
Retaining porches and steps that are appropriate to the building and its development. Porches or additions reflecting later architectural styles are often important to the building's historical integrity and, wherever possible, should be retained.	Removing or altering porches and steps that are appropriate to the building's development and style.
Repairing or replacing, where necessary, deteriorated architectural features of wood, iron, cast iron, terra cotta, tile, and brick.	Stripping porches and steps or original material and architectural features, such as hand rails, balusters, columns, brackets, and roof decoration of wood, iron, cast iron, terra cotta, tile and brick. Enclosing porches and steps in a manner that destroys their intended appearance.

Exterior Finishes

Recommended	*Not Recommended*
Discovering the historic paint colors and finishes of the structure and repainting with those colors to illustrate the distinctive character of the property.	Removing paint and finishes down to the bare surface; strong paint strippers whether chemical or mechanical can permantently damage the surface. Also, stripping obliterates evidence of the historical paint finishes. Repainting with colors that cannot be documented through research and investigation to be appropriate to the building and neighborhood.

BUILDING: INTERIOR FEATURES

Recommended	*Not Recommended*
Retaining original material, architectural features, and hardware, whenever possible, such as stairs, elevators, hand rails, balusters, ornamental columns, cornices, baseboards, doors, doorways, windows, mantel pieces, paneling, lighting fixtures, parquet or mosaic flooring.	Removing original material, architectural features, and hardware, except where essential for safety or efficiency. Replacing interior doors and transoms without investigating alternative fire protection measures or possible code variances.

Recommended	*Not Recommended*
Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible.	Installing new decorative material and paneling which destroys significant architectural features or was unavailable when the building was constructed, such as vinyl plastic or imitation wood wall and floor coverings, except in utility areas such as bathrooms and kitchens.
Retaining original plaster, whenever possible.	Removing plaster to expose brick to give the wall an appearance it never had.
Discovering and retaining original paint colors, wallpapers and other decorative motifs or, where necessary, replacing them with colors, wallpapers or decorative motifs based on the original.	Changing the texture and patina of exposed wooden architectural features (including structural members) and masonry surfaces through sandblasting or use of other abrasive techniques to remove paint, discoloration and plaster, except in certain industrial or warehouse buildings where the interior masonry or plaster surfaces do not have significant design, detailing, tooling, or finish; and where wooden architectural features are not finished, molded, beaded, or worked by hand.
Where required by code, enclosing an important interior stairway in such a way as to retain its character. In many cases glazed fire rated walls may be used.	Enclosing important stairways with ordinary fire rated construction which destroys the architectural character of the stair and the space.
Retaining the basic plan of a building, the relationship and size of rooms, corridors, and other spaces.	Altering the basic plan of a building by demolishing principal walls, partitions, and stairways.

NEW CONSTRUCTION

Recommended	*Not Recommended*
Keeping new additions and adjacent new construction to a minimum, making them compatible in scale, building materials, and texture.	
Designing new work to be compatible in materials, size, color, and texture with the earlier building and the neighborhood.	Designing new work which is incompatible with the earlier building and the neighborhood in materials, size, scale, and texture.

Using contemporary designs compatible with the character and mood of the building or the neighborhood.	Imitating an earlier style or period of architecture in new additions, except in rare cases where a contemporary design would detract from the architectural unity of an ensemble or group. Especially avoid imitating an earlier style of architecture in new additions that have a completely contemporary function such as a drive-in bank or garage.
	Adding new height to the building that changes the scale and character of the building. Additions in height should not be visible when viewing the principal facades.
	Adding new floors or removing existing floors that destroy important architectural details, features and spaces of the building.
Protecting architectural details and features that contribute to the character of the building.	
Placing television antennae and mechanical equipment, such as air conditioners, in an inconspicuous location.	Placing television antennae and mechanical equipment, such as air conditioners, where they can be seen from the street.

MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, PLUMBING, FIRE PROTECTION

Recommended	*Not Recommended*
Installing necessary mechanical systems in areas and spaces that will require the least possible alteration to the structural integrity and physical appearance of the building.	Causing unnecessary damage to the plan, materials, and appearance of the building when installing mechanical systems.
Utilizing early mechanical systems, including plumbing and early lighting fixtures, where possible.	Attaching exterior electrical and telephone cables to the principal elevations of the building.
Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.	Installing vertical runs of ducts, pipes, and cables in places where they will be a visual intrusion.
	Concealing or "making invisible" mechanical equipment in historic walls or ceilings. Frequently this concealment requires the removal of historic fabric.

MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, PLUMBING, FIRE PROTECTION--continued

Recommended	*Not Recommended*
	Installing "dropped" acoustical ceilings to hide mechanical equipment. This destroys the proportions and character of the rooms.
Insuring adequate ventilation of attics, crawlspaces, and cellars to prevent moisture problems.	
Installing thermal insulation in attics and in unheated cellars and crawlspaces to conserve energy.	Installing foam, glass fiber, or cellulose insulation into wall cavities of either wooden or masonry construction. This has been found to cause moisture problems when there is no adequate moisture barrier.

SAFETY AND CODE REQUIREMENTS

Recommended	*Not Recommended*
Complying with code requirements in such a manner that the essential character of a building is preserved intact.	
Working with local code officials to investigate alternative life safety measures that preserve the architectural integrity of the building.	
Investigating variances for historic properties allowed under some local codes.	
Installing adequate fire prevention equipment in a manner that does minimal damage to the appearance or fabric of a property.	
Adding new stairways and elevators that do not alter existing exit facilities or other important architectural features and spaces of the building.	Adding new stairways and elevators that alter existing exit facilities or important architectural features and spaces of the building.

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Access to Historic Buildings for the Disabled:

Suggestions for Planning and Implementation

Please make any comments you wish about this publication. Your suggestions are greatly appreciated.

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